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ABSTRACT

This compilation deals with current programs in environmental education in all 50 states, the District of Columbia, and the Territory of Guam. Arranged state-by-state, this volume details such information as: state plans for environmental education, environmental education legislation, teacher certification, state coordinators for environmental education, state environmental education publications and sources, exemplary state public school programs in environmental education, college and university activities in environmental education, and activities in environmental education by respective state resources agencies. The state-by-state reports are prefaced by a brief review of the document's preparation and recommendations for its application. A list of documents maintained in the ERIC collection and produced by state agencies appends the document. The manuscript was prepared and reviewed by members of the State Coordinators for Environmental Education and the various State Departments of Education along with the National Institute of Education. (RE)

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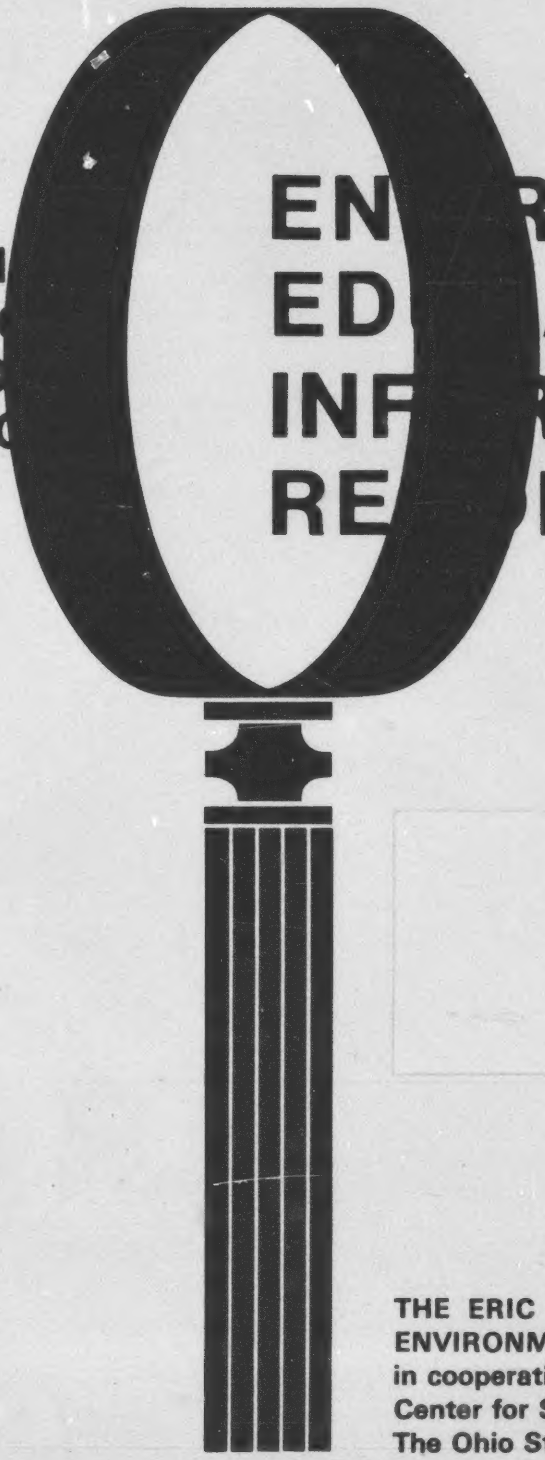

ENVIRONMENTAL EDUCATION INFORMATION REPORT

THE ERIC SCIENCE, MATHEMATICS AND ENVIRONMENTAL EDUCATION CLEARINGHOUSE
in cooperation with
Center for Science and Mathematics Education
The Ohio State University

SE 020 820

ENVIRONMENTAL EDUCATION INFORMATION REPORTS

Environmental Education 1975: A State-by-State Report

compiled and edited by

John F. Disinger and
Mary Lynne Bowman

ERIC Center for Science, Mathematics,
and Environmental Education
The Ohio State University
1200 Chambers Road, 3rd Floor
Columbus, Ohio 43212

December 1975

ENVIRONMENTAL EDUCATION INFORMATION REPORTS

Environmental Education Information Reports are issued to analyze and summarize information related to the teaching and learning of environmental education. It is hoped that these reports will provide information for personnel involved in development, ideas for teachers, and indications of trends in environmental education.

Your comments and suggestions for this series are invited.

John F. Disinger
Associate Director
Environmental Education

Sponsored by the Educational Resources Information Center of the National Institute of Education and The Ohio State University.

This publication was prepared pursuant to a contract with the National Institute of Education, U. S. Department of Health, Education, and Welfare. Contractors undertaking such projects under government sponsorship are encouraged to express freely their judgment in professional and technical matters. This manuscript was prepared, and reviewed, by members of the network of State Coordinators for Environmental Education developed by ERIC/SMEAC cooperatively with the various State Departments of Education. Points of view or opinions, however, do not necessarily represent the official view or opinions of the various State Departments of Education or the National Institute of Education.

PREFACE

In 1972, the ERIC Center for Science, Mathematics, and Environmental Education cooperated with the Office of Environmental Education, U. S. Office of Education, in the development of a five-volume set of State Directories in Environmental Education. The aid of appropriate personnel from state departments of education across the nation was enlisted, both in developing reports for each state and in verifying information gathered from other sources.

ERIC/SMEAC has worked cooperatively with many of these same state education department personnel in a number of areas involving information exchange since 1971. Such cooperative arrangements have become increasingly valuable to the ERIC system in general, and to ERIC/SMEAC in particular, in that a great deal of information has been made available to, then through, the ERIC system, by the efforts of state agency representatives. In addition, a number of needs of the states have been met. A major result has been an informal "State Environmental Education Coordinator Network."

In Spring 1975, the Advisory Committee to the Environmental Education Section of ERIC/SMEAC recommended that the State Directories be updated during the current year, and that consideration be given to periodic updating. Because external funding was not forthcoming, members of the State Coordinator Network were requested to develop reports concerning history, status, current activity, and future projections for environmental education within their states. It was not anticipated that reports would be received from all states, because many members of the State Coordinator Network have responsibility in several areas, thus having several sets of duties, multiple demands upon their time and energies, and differing priorities.

ERIC/SMEAC's expectations in this regard have been met, and exceeded. A report has been developed for each state and is contained in this volume. In all cases, the report was prepared by the member of the Coordinator Network or in his office, or from information supplied by them. Also prepared, in the ERIC/SMEAC offices, has been a list of selected documents announced through the ERIC system which relate to the state reports.

It is anticipated that this volume will be particularly useful to members of the State Coordinator Network, to help them keep abreast of activities in other states. Other field practitioners in environmental education should find much of interest, while students of environmental education should find them instructive.

As compilers and editors of this volume, we are particularly appreciative of the efforts of the members of the Coordinator Network. This appreciation extends not only to efforts extended in preparation of these reports, but for continuing cooperation in all of our mutual efforts.

John F. Disinger
Mary Lynne Bowman

December 1975

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ALABAMA

Environmental deterioration has been under way to some degree since the dawn of civilization, but it has accelerated since the beginning of the industrial revolution. Recognition of these phenomena has been hastened by a series of incidents such as pollution episodes that cause illness and death, massive fish kills, and the discovery of high-level radioisotope and pesticide residues in milk and animal tissue, to name a few. The refinement of analytical technology which permits the measurement of mere traces of pollutants has magnified public concern.

In Alabama there is widespread concern about problem areas that threaten environmental balance. Birmingham, for example, received national attention when monitors recorded extremely high particulate counts in the atmosphere. Mobile Bay, emptying into the Gulf of Mexico, is seriously polluted, with widespread damage to oysters and other aquatic life. Fish kills occur throughout the state as cities and manufacturing plants dump refuse into streams and as toxic wastes find their way into rivers and bays. Alabamians are concerned about these conditions and are eager to correct them. Concerned leaders are eager to promote a program of environmental awareness and education that will insure reduction and eventual prevention of damage.

For decades, such agencies as the Alabama Department of Conservation and Natural Resources and the State Board of Health have worked with the U.S. Department of Interior, U.S. Department of Public Health Service, and U.S. Department of Agriculture to improve environmental controls affecting water, land, and air. Alabama's Air Pollution Control Law, passed in 1971, is among the most comprehensive adopted by any state. It provides penalties in case of noncompliance, establishes a monitoring network, and provides for emergency action when excessive pollution threatens health. A new Water Pollution Control Law, also passed in 1971, is coordinated with provisions of the 1972 Federal Pollution Control amendments and related laws.

Alabama's parks and forests attract residents and tourists to their varied recreation facilities. In many private woodlands, the public is invited to hunt, fish, and hike. Federal developments provide additional recreational facilities. Overuse and misuse of all these facilities are creating serious environmental problems.

In 1970 the State Department of Education requested that representatives from the Alabama Department of Conservation and Natural Resources, State Board of Health, State Department of Agriculture and Industries, Alabama Development Office, The American Association of University Women, and other interested individuals assist the department in revising its environmental curriculum. Representatives from the agencies responded, and during the fall of 1970 this Interagency Council on Environmental Education began its work.

It seemed desirable to involve wider public participation and to rename the committee the Environmental Education Advisory Council.

Alabama has no coordinated program for environmental education either for students or for adults. Although many interested and ingenious individuals have initiated local projects, no statewide curriculum has been developed, nor has a comprehensive adult program been formulated.

However, a Master Plan was developed in November 1973 by Alabama Environmental Quality Association, John W. Bloomer, Chairman, Martha McInnis, Executive Director, Janice Hand, Communications Specialist, Carolyn Dunlavy, Office Manager. It was funded by a grant under P. L. 91-516, the Environmental Education Act of 1970. The Master Plan represents a blueprint for action, custom-tailored to meet the needs and demands of ordinary citizens as well as formalized groups from education, public and private organizations, state and local governments and business and industry. It has been structured so that the average citizen may play an active role in the state's comprehensive, long-range planning and participate in setting priorities for environmental improvement. Copies may be obtained by writing the Alabama Environmental Quality Association, P.O. Box 11000, Montgomery, Alabama 36111.

There is no environmental education legislation in Alabama.

Alabama has no teacher certification for environmental education.

Ms. Donna Bentley is Environmental Education Coordinator.

There is no environmental education advisory board.

An environmental education resource catalog, Getting It All Together, was published this year by the Alabama Environmental Quality Association. It includes information about activities in environmental education in state government, regional programs, local programs, environmental organization, civic groups, public schools, colleges and universities, youth groups and the federal government.

- Ms. Donna Bentley
Education Specialist (Science)
111 Colesium Boulevard
Basic Sciences Section
State Department of Education
Montgomery, Alabama 36109
(205) 832-5850

September 1975

ALASKA

Currently the State of Alaska has no coordinator for environmental education within its State Department of Education, due to lack of federal funding. It is anticipated that the position will be reinstated should funds become available, according to correspondence received from Ms. Marilou Madden, Director, Division of Educational Program Support, Alaska Department of Education.

In the recent past Alaska's Department of Education was quite active in environmental education, operating in large part under federal funding. A state plan, Planning Guidelines for Environmental Education (ED 100 638), provided recommendations for implementing a total environmental education curriculum and proposed the responsibilities of educational organizations, state and federal resource agencies, and the community.

The Alaska Environmental Education Newsletter, a monthly bulletin of the Environmental Education section of the Department of Education, is no longer published.

It has been requested that correspondence concerning environmental education be addressed to: Specialist, Environmental Education, State of Alaska, Department of Education, Pouch F, Alaska Office Building, Juneau, Alaska 99801.

September 1975

ARIZONA

State Plan for Environmental Education

Arizona has not developed a state plan for environmental education and has no intention at this time of doing so.

Environmental Education Legislation

Arizona has not and does not anticipate legislation in this area.

Teacher Certification

There is no environmental education certification available in Arizona and none is planned.

State Coordination for Environmental Education

Mr. Carlos Moore, Consultant for Agribusiness and Natural Resources, Arizona Department of Education, 1535 W. Jefferson, Phoenix, Arizona 85007. (602) 271-4361

Mr. Lyman Jackson, Consultant, Innovation and Support Services, Arizona Department of Education, 1535 W. Jefferson, Phoenix, Arizona 85007. (602) 271-4361

Environmental Education Advisory Board

This board was disbanded by the Superintendent of Public Instruction in May 1975.

Environmental Education Publications of the State Department of Education

1. Elementary Education Teachers Resource Guide for Environmental Education
2. Environmental Education Resource Catalog
3. Environmental Education Activities for Grades 4-6

The above items are available for distribution through the Arizona Department of Education.

Exemplary Public School Activities in Environmental Education

Community Nature Center, Dr. Henry Dahlberg, Director, P.O. Box 1231, Prescott, Arizona 86301.

Life in Flagstaff's Environment Outdoor Camping Program, Mr. Jerry Mabry, Director, 2701 N. Ivabel, Flagstaff, Arizona 86001.

College and University Activities in Environmental Education

Center for Environmental Studies, Arizona State University, Tempe, Arizona, Dr. Melvin Marcus, Director.

State Resource Agency Activities in Environmental Education

A teacher training program in Arizona was conducted in cooperation with private environmental education interest groups in the use of the Elementary Education Teachers Resource Guide in Environmental Education.

Other Environmental Education Activities in the State

No other participation.

- Lyman Jackson
Education Program Specialist
ESEA, Title III (Innovations)
Arizona Department of Education
1535 West Jefferson
Phoenix, Arizona 85007
(602) 271-4361

November 1975

ARKANSAS

Background

The environmental education program in Arkansas began in 1971 as a federally-funded project by the U. S. Office of Education, Environmental Education office. The project was successfully funded for three years for the purpose of introducing environmental education into the schools and communities of the state. The program seeks to integrate environmental education multi-disciplinary activities into school curricula and to involve community groups in environmental problem-solving activities. Environmental education now is a recognized part of the state education department's operation plan. The program's function is to help coordinate the environmental education efforts in the state on a statewide basis. It is presently working with over 25 per cent of the over 380 school districts in the state to help them develop their environmental programs. The environmental education office of the Department of Education has been successful in involving diverse groups in the environmental education effort (power companies, farmers, environmental groups, and business).

The office plans to develop lesson plans which deal with the systems approach to understanding the total environment (economic, social, and natural systems). This presentation should have a wide audience from grade school children, general public, and environmental planners. The program plans to conduct annually an environmental education institute for teachers.

Legislation

A great deal of legislation has occurred in the state dealing with the environment such as setting aside natural areas. It is expected at some point that there will be a need for legislation for additional personnel in the environmental education office.

Teacher Certification

At present there are no degree programs or certification for teachers in environmental education. The University of Central Arkansas in Conway is in the process of developing such a degree program.

Coordination

Mr. Phillip E. Powell, Coordinator of Economic, Environmental, and Conservation Education, acts as Coordinator and program manager for the environmental education office.

Mr. Bill Fulton, Specialist in Environmental Education, works in the areas of curriculum and activity guide development, outdoor environmental education workshops (U.S. Forest Service) and the development of outdoor classrooms.

Mr. F. H. (Jim) Martin, Specialist in Environmental-Conservation Education, works in the area of awareness and motivational workshops and presentations, radio and television shows and college workshops.

The above can be contacted by writing to them at: Arkansas Department of Education, Little Rock, Arkansas 72201, (501) 371-2061.

Advisory Council

The Arkansas Advisory Council on Environmental Education is composed of 36 active members and 30 satellite members (those who do not actively attend meetings, but are considered part of the environmental education network). The Advisory Council consists of diverse groups such as educators, businessmen, state and federal resource agencies, and private environmental groups.

Television Series

Jim Martin hosts a television series entitled "The Environment and You" on KETS educational television station in Conway. The program centers on efforts in the Arkansas environment.

Environmental Education Publications

Publications by this Department are as follows:

1. "Investigating Your Environment," a series of outdoor environmental education lesson plans that have been revised and added from the U.S. Forest Service workshops of the same title.
2. "The Farkleberry Cookbook in Environmental Education," a sometimes humorous but exciting teaching guide filled with student activities which involve them in practical environmental problem solving, secondary level.
3. "Ernie Erg's First Primer on the Energy Crisis," a story-form discussion of the economics of energy production, grades 4-6.

The above publications are free upon request, one per person or organization.

Activities in Environmental Education

1. The Title III Springdale-Fayetteville aquatic center is an environmental education program which centers its study on the water resources of Northwest Arkansas. For more information contact Norman Crowder, Springdale Public Schools, Springdale, Arkansas 72764.

2. Title III Little Rock Public Schools, W. Markham and Izard Streets, Little Rock, Arkansas 72201, environmental educational program centers around fifteen-day units used in grades 4-12 plus one day field trip activity in a natural environment. In the future Little Rock schools will be working in cooperation with the Arkansas State Department of Parks and Tourism in using the environmental park (Pinnacle State Mountain) once it has been developed.

3. The Arkansas Department of Parks and Tourism, 1510 Broadway, Little Rock, Arkansas 72202, has been funded under P.L. 91-516 of the U.S. Office of Education, Environmental Education. Under mini-grant funding, the Department has developed a state plan to develop an environmental education center at Petit Jean State Park which will be used for personnel development and educational materials production.

4. U.S. Forest Service has cooperated with other agencies in conducting the "Investigating Your Environment" workshop. The Arkansas Forest region has been one of the most successful in conducting these workshops. Contact Bob James, U.S. Forest Service, Hot Springs, Arkansas 71901, and Art Cowley, U.S. Forest Service, Russellville, Arkansas 72801.

5. The Soil Conservation Service has been instrumental in developing a number of outdoor classrooms throughout the state. For information contact Herb Evans, Soil Conservation Service, Federal Building, West Capitol, Little Rock, Arkansas 72201.

6. The Drug Education office of the Department of Education funded an alternative approach to the study of drugs in environmental education and backpacking. For information contact Tommy Jenkins, Science Department, Fayetteville High School, Fayetteville, Arkansas 72701.

Higher Education Activities

One college NSF environmental education institute was conducted by Dr. Sallylee Hines, Graduate Education Building, University of Arkansas, Fayetteville, Arkansas 72701.

The University of Central Arkansas plans to develop a degree program in environmental education. Contact: Dr. Bob Morrow, University of Central Arkansas, Conway, Arkansas 72032.

Resource Agency Activities

A number of state resource agencies have cooperated in conducting the "Investigating Your Environment" workshop which deals with developing environmental process skills.

Arkansas Game and Fish Commission
Capitol Mall
Little Rock 72201

Arkansas Forestry Commission
3821 West Roosevelt Road
Little Rock 72204

Geology Commission
3819 West Roosevelt Road
Little Rock 72204

Agriculture Extension Service
1201 McAlmont Road
Little Rock 72201

Farm Bureau
7th and High Streets
Little Rock 72201

Arkansas Department of Parks and Tourism
149 State Capitol
Little Rock 72201

Governor's Office
250 State Capitol
Little Rock 72201

Arkansas Department of Local Services
First National Building
Suite 9001
Little Rock 72201

Arkansas Natural Heritage Commission
Old Territorial Capitol
Markham Street
Little Rock 72201

Organizational Activities

Other organizations which have been instrumental in environmental education efforts are the Ozark Society, Sierra Club, Audubon Society, Garden Club, Arkansas Council on Economic Education, Arkansas Power and Light, Arkansas Federation of Water and Air Users.

State Program

It is important to note that the Arkansas Environmental Education program has been in existence since public law 91-516 has been enacted. The program has been able to develop a program which has been recognized by other environmental educators as truly fitting the definition of environmental education. It is one that is multi-disciplinary, activity oriented, and futuristic in its outlook. It has been able to involve a large number of very diverse and competing groups in working together to produce a quality program in environmental education.

- William L. Fulton, Specialist
Environmental Education
State Department of Education
State Education Building
Little Rock, Arkansas 72201
(501) 371-2061

November 1975

CALIFORNIA

State Plan for Environmental Education

In 1966 the California State Senate held hearings on the status of formal school conservation education programs, the role of the State Department of Education in this subject field, and the need for legislation in this area.

Following the Senate hearings, the State Board of Education set up a Citizens Advisory Committee to develop recommendations for upgrading the Department of Education and improving and expanding local school programs.

In 1969, the Advisory Committee reported to the State Board of Education, recommending that:

> A Conservation Education Service be set up in the Department to provide statewide leadership and program services.
>
> A curriculum guide for a K-12 interdisciplinary program be developed.
>
> A grant program be set up through which local education agencies might receive funds for teacher training, curriculum materials development, site purchase and improvement, and other essential services.

The Advisory Committee report became in effect the state environmental education plan for formal school programs. Many of the recommendations of the Advisory Committee have resulted in state legislation and action programs by the Department of Education. The California Resources Agency works with the State Education Agency in planning and conducting programs, and considerable support and assistance is provided by business and industry, private conservation associations and various federal and state resource management agencies.

State legislation in the environmental education area as a result of the Advisory Committee recommendations includes:

> A curricular requirement that instruction in wise use of natural resources and protection of the environment be provided in all appropriate grade levels and subject areas, grades 1-12.
>
> Wise use of natural resources and protection of the environment shall be emphasized when appropriate in all state adopted textbooks and materials.
>
> An environmental education service was set up in the Department of Education to provide leadership and program services to educational agencies throughout the state.

Funds were provided through the sale of personalized license plates to conduct an annual grant program through the Department of Education.

A plan for informal public education programs has never been developed. The Advisory Committee has discussed the needs and possibilities for action, but nothing has been done so far.

Legislation Relative to Environmental Education

Excerpts from California Education Code, 1968 Supplement Relating to Conservation Instruction. (Chapter 3. Department of Education) (Article 1. General Provisions)

Conservation Education Service

363.5. There is hereby created a Conservation Education Service in the Department of Education. The Conservation Education Service shall encourage the development of educational opportunities specifically related to the conservation, the interpretation, and the use of the natural resources of the State of California, including but not limited to, the development of nature centers, the development of conservation and wildlife education camps, and the development of the educational curriculum in relation to the conservation of natural resources. (Added by Stats. 1968, Ch. 978.)

Article 3. Course of Study for Grades 7 Through 12

Areas of Study

8571. The adopted course of study for grades 7 through 12 shall offer courses in the following areas of study:

(a) English, including knowledge of and appreciation for literature, language, and composition, and the skills of reading, listening, and speaking.

(b) Social sciences, drawing upon the disciplines of anthropology, economics, geography, history, political science, psychology, and sociology, designed to fit the maturity of the pupils. Instruction shall provide a foundation for understanding the history, resources, development, and government of California and the United States of America; man's relations to his human and natural environment; eastern and western cultures and civilizations; and contemporary issues.

Article 2. Course of Study for Grades 1 Through 6

Areas of Study

8551. The adopted course of study for grades 1 through 6 shall include instruction, beginning in grade 1 and continuing through grade 6, in the following areas of study:

(a) English, including knowledge of and appreciation for literature and the language, as well as the skills of speaking, reading, listening, spelling, handwriting, and composition.

(b) Mathematics, including concepts, operational skills, and problem solving.

(c) Social sciences, drawing upon the disciplines of anthropology, economics, geography, history, political science, psychology, and sociology, designed to fit the maturity of the pupils. Instruction shall provide a foundation for understanding history, resources, development, and government of California and the United States of America; man's relations to his human and natural environment; eastern and western cultures and civilizations; and contemporary issues.

Conservation Education

6011.5. The State Superintendent of Public Instruction, upon the recommendation of the Conservation Education Service, is authorized to make planning grants to individual school districts, or groups of school districts, or to unified school districts to assist such school districts in determining the feasibility of programs and classes in conservation education and the feasibility of the maintenance of outdoor education camps and projects for such purposes. (Added by Stats. 1968, Ch. 978.)

Instruction in Personal and Public Health and Safety

8503. The adopted course of study shall provide instruction at the appropriate elementary and secondary grade levels and subject areas in personal and public safety and accident prevention; fire prevention; the protection and conservation of resources; and health, including the effects of alcohol, narcotics, drugs, and tobacco upon the human body.

Conservation, Bird, and Arbor Day

5205. March 7th of each year, the anniversary of the birthday of Luther Burbank, is set apart and designated Conservation, Bird, and Arbor Day.

All public schools and educational institutions shall observe Conservation, Bird, and Arbor Day not as a holiday, but by including in the school work of the day, suitable exercises having for their object instruction as to the economic value of birds and trees, and the promotion of a spirit of protection toward them, and as to the economic value of natural resources, and the desirability of their conservation.

Projected Legislation

SB 430 recently passed by the Legislature and sent to the Governor will change all Education Code references from conservation to environmental education and will allocate 25 percent of all personalized license plate funds to the environmental education grant program. (Estimated allocation: $500,000 per year.)

SB 159 provided $4.50 per day additional state funds for any student who attends a resident outdoor school program. The bill was defeated in the Legislature, but will be introduced next session.

Teacher Certification

State law does not require specific subject requirements for teacher certification. Teacher training institutions set these requirements, and most include some work in environmental education.

State Coordinator

Rudolph J. H. Schafer, Consultant in Environmental Education, California Department of Education, 721 Capitol Mall, Sacramento, California 95814, (916) 322-4983.

Activities of the State Coordinator

Grant Program. Responsible for administration of environmental education grant program which is funded through the sale of personalized license plates. Responsibilities include developing application, reviewing and evaluating applications, developing award recommendations, supervising projects once funded. The 1974-75 budget allocated $275,000 for the grant program. Approximately 70 grants totaling $750,000 have been made over the past three years.

Merit Award Program. Organized and developed environmental merit award program and has coordinated it for the past two years. Through this program students are encouraged to develop school-community environmental improvement projects. A communications network involving schools, districts, county offices, and the Department has been set up to distribute materials, encourage participation, and select outstanding projects for statewide awards. Cooperating agencies include the U.S. Environmental Protection Agency, California Chamber of Commerce, California Resources Agency, several county offices of education and others. Plan and conduct annual environmental merit award banquet to honor outstanding students.

Western Regional Environmental Education Project. The project involves the departments of education and resource management agencies of 13 western states for the purpose of coordinating environmental education programs, developing materials and producing in-service education activities for participating members. Title V section 505 funds were used in this project, but it is now self-supporting (See Colorado report for more detail).

Environmental Education Advisory Boards

The Superintendent's Advisory Committee on Environmental Education meets every six weeks to advise the State Superintendent of Public Instruction and the Department of Education on environmental matters.

A Departmental Advisory Committee in the Department of Education works to coordinate the various environmental education-related programs within the Department.

The Resources Agency also has an environmental education advisory committee which includes a Department of Education representative as an ex officio member. The chairman of the Resources Agency committee serves as an ex officio member of the Citizens Advisory Committee.

Current members of the Superintendent's advisory committee are:

Jack Davidson, Consultant, Curriculum and Instruction, Los Angeles County Schools, 9300 E. Imperial Highway, Downey, California 90242 (213) 922-6334.

William DuBois, California Farm Bureau Federation, 11th and L Building, Sacramento, California 96814.

Loren D. Good, Executive Vice President, Redwood Region Conservation Council, 224 Rosenberg Building, Santa Rosa, California 95404 (707) 545-9531.

Edwin Pumala, 1164 Bangor, San Diego, California 92106.

Bruce Crawford, 311 Kern, Shafter, California 93263 (805) 746-2408

Martin Montano, Superintendent, Los Nietos Elementary School District, P.O. Box 2006, Los Nietos, California 90610 (213) 692-0271.

Jim Ruch, Assistant Regional Director, Bureau of Land Management, 2800 Cottage Way, Sacramento, California 95825.

Ray A. Underhill, Chairman, Life Science Division, Sierra College, 5000 Rocklin Road, Rocklin, California 95677 (916) 624-3333, Ext. 225.

Mrs. Peggy Wayburn, 30 Sea View Terrace, San Francisco, California 94121 (415) 386-4241.

Ms. Judy Weiner, 441 Howland Canal, Venice, California 90291 (213) 822-1957.

Ms. Jane Westenberger, Director, Office of Information, U.S. Forest Service, 630 Sansome Street, San Francisco, California 94111 (415) 556-0122.

Bill Dillinger, Resources Agency Representative, Department of Parks and Recreation, 1416 Ninth Street, 14th Floor, Sacramento, California 95814 (916) 445-4624.

Rudolph J. H. Schafer, Executive Secretary, Consultant in Environmental Education, California State Department of Education, 721 Capitol Mall, Sacramento, California 95814 (916) 322-4983.

Environmental Education Publication of the Department of Education

"You and Nature" - An illustrated brochure showing good and bad conservation practices. Also lists and describes the principal Federal and State resource management agencies operating in California.

Handbook of California's Natural Resources Volume 1 and 2. Volume 1 lists and discusses several major concepts of resource management and environmental protection of interest to teachers. Volume 2 is an illustrated handbook on the resources of California including soil, water, minerals, air, plant life, wildlife, and fish.

"A Report to the California State Board of Education by the Conservation Education Advisory Committee." - Prepared by an ad hoc citizens advisory committee, the report details the basic needs for conservation education in California and explains methods of meeting these needs. Adopted by the State Board of Education.

Conservation in Miniature - An illustrated report of conservation education activities conducted at the Moniux Science Center, Los Angeles City Schools, for elementary schools. Stresses community participation and describes how to obtain and utilize such support. May be obtained at a cost of $1.50 plus tax from: State Office of Procurement, Documents Section, P.O. Box 20191, Sacramento, California 95826.

Guide for Teacher In-service in Ekistics--A Study of Man in His Environment (Los Angeles County Superintendent of Schools) - Available in limited quantities for use in teacher training activities.

Community Resources for Environmental Education. Available in limited quantities.

"Policy Statement on Conservation Education" - Wilson Riles, State Superintent of Public Instruction.

Environmental Education--A Teacher's Guide with Inquiry and Value Seeking Strategies - Prepared by the Santee School District. Available in limited quantities.

Information Packets - A collection of publications relating to conservation gathered from a number of sources.

Ekistics - A Handbook for Environmental Education Curriculum Development - This kindergarten through twelfth grade interdisciplinary conceptual outline was prepared by a project team headed by Dr. Paul Brandwein.

Exemplary Public School Programs

ESEA, Title III

1. Los Angeles City Schools Environmental Education Project, Grant Carey, Laurel Ecology Center, 1044 N. Hayworth Avenue, Los Angeles, California 90046, (213) 656-7457.

2. Humboldt County Office of Education Environmental Education Project, Bill Gaffaney, Office of Environmental Education, County Court House, Room 110, Eureka, California 95501, (707) 445-7611.

P.L. 91-516

1. San Juan School District Environmental Education Project, Randy West, Hemlock School, 5320 Hemlock, Carmichael, California 95841, (916) 484-2669.

2. San Diego County Community Environmental Education Project, John Gessel, San Diego County Schools, 6401 Linda Vista Road, San Diego, California 92111, (714) 278-6400.

3. Washington Environmental Yard - Berkeley Unified School District, Herb Wong, Washington School, 2300 Grove Street, Berkeley, Californai 94704, (415) 843-8185.

Other Federal Funded

1. Bureau of Land Management - Desert Protection Program, Jim Ruch, Bureau of Land Management, 2800 Cottage Way, Sacramento, California 95825, (916) 484-4676.

2. California Department of Parks and Recreation, Bill Dillinger, Chief of Information Division, Department of Parks and Recreation, 1416 Ninth Street, Sacramento, California 95814, (916) 445-4624.

State Funded (under Personalized License Plate Program)

1. Marin County Superintendent of Schools. A 30-minute film titled "Sights and Sounds of the Seasons" suitable for classroom and teacher training use will be produced featuring Bay Area environmentalist Elizabeth Terwilliger. Marin County Office of Education will furnish materials and services, and Standard Oil Company of California will produce 50 copies of the completed film for free school distribution.

2. Mt. View - Los Altos Union High School District. District will conduct a school-community problem-solving education program on the bay fill problem. State funds to be used for teacher workshop, instructional materials, transportation, and substitute expenses. Program will be evaluated at conclusion of the project, and continued at local expense if warranted.

3. Lake Tahoe Community College District. An in-service class on ecological problems of the Lake Tahoe Basin will be conducted, and all instructors in this new community college will participate. Ways and means of integrating information gained in the workshop in all courses and programs will be explored, and interdisciplinary relationships set up.

4. Fallbrook Union School District. The district has developed a 125-acre environmental study area which serves many local schools, and employs a full-time director. State funds will be used for site improvements and demonstration equipment on solar energy and other alternative means of power generation.

5. California State Air Resources Board. The agency will develop student study materials and an informational packet for classroom use on the problems of air pollution in California. Materials produced through the project will be reproduced for distribution to schools. A high school student from the Sacramento area will work with Departmental staff in developing these materials.

6. Cabrillo Unified School District - San Mateo Community College District. A 180-acre site owned by the community college district will be developed by both districts to serve as a K-12 environmental study and agricultural educational facility. Nature trails, erosion control projects, animal study areas will be developed, and cross-age

teaching projects set up. Applicant agencies will provide land and services. State funds will be used for materials, site improvements, and equipment.

7. Victor Gruen Foundation. This regional conservation education center proposes to conduct six two-day workshops for 600 secondary teachers on urban ecology and land use planning. Simulation games and other materials will be supplied. The Foundation has previously conducted workshops which were highly rated by teachers attending.

8. Barstow Unified School District. This district has operated a highly successful desert environmental study center for the past seven years which serves some 3,000 students in grades 5-12 annually. State funds are requested for materials with which the staff will construct technical equipment for measuring and recording changes in desert microclimates.

9. Lincoln Unified School District. The district is working on a one-acre nature study area which will be used by high school classes, elementary students, and local community groups. A variety of subject fields are covered in the project, including science, business management, vocational landscaping, and art.

10. Peninsula Conservation Foundation. A regional environmental education center proposes to conduct 10 teacher inservice workshops on using the school grounds as an instructional resource. The organization has a good reputation and considerable community support. They have conducted similar classes for teachers in the past, and wish to expand the program.

11. Irvine Unified School District. The district plans to set up an interdisciplinary high school class involving 7 teachers and 30 students. Emphasis will be on identifying and solving local environmental problems using a variety of skills and knowledge. State funds are requested to cover special costs of the program such as travel, materials, and professional consultants. This project has evolved as a joint faculty-administration project, will be evaluated at all stages, and will be expanded if successful.

12. Los Angeles County Superintendent of Schools. Applicant agency will develop an evaluation and accreditation procedure for resident outdoor school programs in cooperation with directors of such programs throughout California. Materials and procedures will be developed and field tested, and a complete proven plan submitted to the state.

13. California Division of Forestry. This state agency has developed a fire prevention--ecology program in cooperation

with Chico State University. Materials have been produced and distributed, teacher training classes held, and more are scheduled. A 16mm film has been produced for use with the program, but only one print is available. State funds will be used to produce six copies of the film "Our Forests" and two copies of the same materials in the video cassette form.

14. Petaluma High School District. Work is progressing on an environmental study area adjacent to Kenilworth High School which will serve several elementary and secondary schools in the area. Considerable work has been done, and there are pledges of additional materials and services from the Engineers and Grading Association of Sonoma County, California State College, and others. Cross-age teaching activities involving elementary and secondary students as well as regular classroom programs will be conducted.

15. San Juan Unified School District. Building on a successful environmental education project developed with federal and district funds, the San Juan District will expand the program to emphasize energy conservation using various historical artifacts loaned by the State Department of Parks and Recreation. Local contribution includes personnel services, materials and services. State funds to be used for personnel services, equipment and other expenses of curriculum development and teacher training.

16. Alameda County Office of Education. In cooperation with East Bay Municipal Utilities District, a survey of EBMUD land suitable for environmental studies has been produced and an extremely well-done guidebook produced. State funds are sought to develop a county-wide educational utilization plan using this previously produced material.

17. Kern County Office of Education. This county office operates a most successful resident outdoor school program in portable facilities they designed and built, using for the most part state surplus materials. State funds will be used to purchase a small bus which will be used to transport students to and from environmental study sites and the portable resident facility.

18. Tulare County Superintendent of Schools. This agency has operated a most successful resident outdoor school program utilizing a great amount of contributed labor, materials and other community contributions. State funds are requested to construct a greenhouse, garden activity center, watering system and walk-in refrigerator.

19. Humboldt County Schools. This agency has conducted a successful rural environmental education program for the past three years using ESEA III funds. State funds are requested to produce materials and services necessary to

conduct a number of teacher training classes throughout California utilizing these previously developed and proven materials. Ten sessions covering between 700 and 1,000 teachers are planned.

20. Foothill Community College District. District will develop and evaluate an interdisciplinary environmental education program and a report will be developed to assist other community colleges in developing similar programs. State funds to be used for personnel services, materials and other necessary expenses.

21. Folsom-Cordova Unified School District. The school district with the aid of community volunteers and local contributions of materials is developing an environmental study area on one acre of land at Williamson School.

22. Solano County Community College District. A biology instructor at the college will take a sabbatical leave during which she will develop an educational guide and elementary teacher resource materials on the ecology of the salt marshes near Benicia and adjacent areas. This materials will also be of great value to the California State Department of Parks and Recreation.

23. Placer County Office of Education. The applicant agency has a 400-acre mountain site near Weimar which is available for environmental education purposes. The area will be developed and will eventually serve students and teachers from three counties. The proposed project will involve developing nature trails, preparing study materials for students and teachers, and conducting in-service classes.

24. Regents, University of California. The U. C.-Davis multiple subject teaching credential program is well-suited to developing environmental education specialists. The University proposes to prepare 75 candidates in this area, to conduct in-service classes, and to conduct an environmental education conference in May 1976.

25. Shasta County Superintendent of Schools. This agency operates a resident outdoor school in cooperation with the National Park Service at Whiskeytown National Recreation Area. The school serves students from a surrounding five-county area. Through this project they will develop an in-service program for teachers who will send students or attend with their classes so that the necessary pre and follow-up instruction can be provided. One two-day workshop will be conducted in each county. (Total: 5 workshops).

26. San Francisco Unified School District. School and community volunteers are developing a natural study area on land owned by the district adjacent to Twin Peaks School. Considerable local effort has gone into the project thus far, and there are pledges of additional assistance.

27. Tahoe-Truckee Unified School District. The district conducts a winter outdoor environmental study program, and snowshoes are needed for student participants. State funds will be used to purchase materials and equipment to enable students to produce their own snowshoes according to plans developed by the San Juan School District.

28. Napa Valley Unified School District. A 1.3-acre site adjacent to Donaldson Way School will be developed as a school-community environmental study area. The site is adjacent to salt marshes, and a number of environmental study features are included in the plans. The district will contribute the value of the land, personnel services, and $3,300 in labor and materials has been offered by the community. State funds will be used principally for site improvements and construction of necessary facilities.

29. Berkeley Unified School District. This agency has developed a school-community environmental study program which has been cited as a national demonstration model by USOE. Considerable local support is provided by P.G.&E., Chevron Chemical Corporation, as well as community volunteers.

30. Saratoga Union School District. The applicant agency, City of Saratoga, and a number of community volunteers have developed an environmental study area in the community which offers a variety of educational experiences.

31. Lake County Office of Education. The Nature Conservacy, a non-profit organization, which purchases land for environmental study purposes, has acquired a 101-acre site at Boggs Lake which they will turn over to the county office of education if this agency will develop it as an outdoor study site. The applicant agency will contribute personnel services, travel and material to the project in addition to the value of the land. State funds will be used for a water well, septic tank and other necessary facilities.

32. Hemet Unified School District. A K-12 school and community environmental education project utilizing school grounds, city parks, and a 600-acre donated study site. Students and the community--particularly senior citizens--are involved in the project. Local contributions include services, materials and facilities, plus cash. State funds will be used to purchase and equip a mobile home which will be modified to serve as an environmental study lab and placed on the 600-acre study site.

33. Pasadena City College. The Outward Bound Adventures project has provided a variety of outdoor and environmental experiences for minority students in the Los Angeles area. Funds are sought for a program which will involve 500 secondary students in studies of the environmental problems of the Sierras.

34. Huntington Beach Union High School District. A joint school and city grant project which will result in a community environmental laboratory to (1) monitor local environmental problems, and (2) serve as a teaching resource center. Considerable work has been done, and the two agencies will supply personnel, materials and facilities. State funds will be used to purchase a van which will be modified to serve as a mobile lab.

35. Tucker Wildlife Sanctuary. This regional conservation center is operated by the California State University Fullerton Foundation and has offered an excellent environmental education program for several years serving some 60,000 students and other visitors per year. Funds are sought to permit the expansion of the program to additional students through a mobile education unit. Local contributions include personnel services, materials and equipment will cover teacher training expenses. State funds will be used to purchase a 12-passenger club van, pay students assistants to work with schools, and cover various other expenses.

36. Youth Sciences Institute. The regional conservation education center serves some 45,000 students and adults in the San Jose area annually. Services include a museum, several outdoor study programs, elementary school science projects, and a native bird rehabilitation project. The City of San Jose has given the Institute land and buildings upon which to develop a greatly expanded facility. The site also has a creek and other environmental study features. Local contributions include land, materials and personnel services. State funds will be used for improvements on the recently donated site and buildings thereon.

College and University Programs in Environmental Education

1. Dr. Esther Railton, California State University, 25800 Hillary Street, Hayward, California 94542, (415) 881-3000. Masters Degree in Environmental Education.

2. Dr. William Hammerman, San Francisco State University, 1600 Holloway Avenue, San Francisco, California 94132, (415) 469-2282. Outdoor School Environmental Education Programs.

Outdoor Education Contact People Throughout the State (June 1975)

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AMADOR
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Assistant Superintendent
204 Court Street
Jackson 95642
(209) 223-1750

BUTTE
William J. Caven
Assistant Superintendent
3 County Center Drive
Oroville 95695
(916) 534-4678

CALAVERAS
Milton Goodridge
Superintendent of Schools
County Government Center
San Andreas 95249
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Clint Nielson
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FRESNO
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YUBA
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- Rudolph J. H. Schafer
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September 1975

COLORADO

State Plan for Environmental Education

A state plan for environmental education was developed by the Center for Research and Education, Denver, under USOE Grant No. OEG-0-71-4578 (508). Its scope included the entire state of Colorado, at all age levels, with strong emphasis on "non-formal" education. The plan is currently inactive.

Following the end of federal funding, a Colorado Environmental Education Council was incorporated to follow through on the recommendations and accomplishments of the project staff and Master Advisory Planning Council. Solicitation of membership and financial assistance failed to generate sufficient resources to continue, and the Council was dissolved.

The master plan in environmental education was structured in anticipation of a national groundswell for environmental reform that would be reflected in vigorous state support. The plan addressed itself to the USOE Office of Environmental Education's approach for "non-formal" as well as "formal educational" involvement. It was conceived as being only a small part of a supreme effort guided by astute national executive leadership to guide our country to enhanced life quality. As such it would have been only one segment of many environmental master plans that reached into every aspect of the total environment. (A total environmental effort was envisioned by the Colorado Environmental Commission in the Colorado: Options for the Future, Final Report of the Colorado Environmental Commission, March 1972.) The completed plan is addressed primarily to public involvement with limited but complementary application to schools. Although the recommendations of the Council are weighed in present planning and serve various agencies as a resource for modifying or adopting portions of their own educational plans, the master plan's full implementation would seem unlikely unless those conditions which were anticipated at its inception came to pass.

Environmental Education Legislation

Senate Joint Resolution No. 22, Forty-Seventh General Assembly, 1970, requested the Colorado Department of Education to collect information, data, and materials concerning environmental and population problems. No other legislation has been passed, although a bill was drafted in 1972.

Teacher Certification

To achieve teacher endorsement on a Colorado certificate in "Environmental Education," the person so certified must have completed a state-approved college program in environmental education. Colorado State University is the only institution of higher learning that has a teacher endorsement for a "biological sciences (environmental emphasis)". No administrative certification in environmental education is available.

As part of the emphasis of the Development and Demonstration Unit within the Department of Education and the Colorado Division of Wildlife, environmental education is viewed in Colorado as being of instructional importance--worthy to be included in all curriculum--at all grade levels, in every subject, and in every way possible. Fundamental knowledge and understanding of the absolute dependency of all life upon water, soil, air and energy--and the human resources that act upon them--coupled with good teaching skills and materials needs to be in the professional portfolio of teachers and administrators alike. The goal is to direct children to respect their natural resources for their future progeny and to exercise their responsibility wisely and rationally.

State Coordinator

George A. Ek, Conservation Programs, Department of Education, Development and Demonstration Unit, 201 E. Colfax, State Office Building, Denver, Colorado 80203, (303) 892-3382.

Environmental Education Advisory Boards

None.

Environmental Education Publications

Materials are generally not available for distribution out of state.

Cooperative Program

The Colorado Department of Education and the Colorado Division of Wildlife operate a jointly financed, planned, and administered program through the Information and Education Section of the Division of Wildlife and the Development and Demonstration Unit of the Department of Education. The purpose is to develop a unified approach to environmental conservation and wildlife education by matching long-range student needs with the natural renewable resource needs of Colorado and North America for the purpose of building a respect and responsibility for natural resources.

Among services offered by this cooperative program are: In-service workshops in environmental conservation and wildlife; Outdoor study area planning and assistance; Audio-visual productions in wildlife and natural resource conservation; Television, radio, and newspaper coverage of wildlife and conservation issues; Wildlife Conservation Library, a growing repository of wildlife information and audio-visual aids with increasingly greater emphasis on natural resource use; Information services to Educational Boards of Cooperative Services, school districts, and resource agencies; Educational assistance, upon request, in conservation and wildlife. Contact George Ek (as above), or Colorado Division of Wildlife, 6060 Broadway, Denver, Colorado 80216, (303) 825-1192.

Selected films and materials are available through Division of Wildlife Regional Offices in Fort Collins, Grand Junction, Colorado Springs, and Montrose.

Elementary and Secondary Programs

Colorado's "306 State Facilitator Project," funded under ESEA, Title III, has identified a number of environmental education efforts in the state and is currently developing a detailed directory for the use of educators. The project is being conducted by the Northern Colorado Board of Cooperative Educational Services, with the assistance of the Conservation Programs of the Colorado Department of Education. Director of the project is Dr. Duane C. Webb, 830 South Lincoln Street, Longmont 80501; (303) 772-4420 or (303) 442-2197. The listing below was provided by Dr. Webb's office.

Air Academy High School; Sophomore Experiential Educative Program; grade 10; V. F. Lacy, Counsellor.

Bethlehem Lutheran School, Christ-University Hills School; Lutheran Resident Outdoor Education; grades 5-6; Donald E. Schmidt, Co-ordinator.

Cherry Creek High School; Pingree Park; grades K-12; Dan Van Gorp, Science Teacher.

Cheyenne Mountain High School; STOP - Students to Obliterate Pollution; Grades 7-9; Robert L. Andreason.

Colorado Springs School District 11; Sixth-Grade High Trails Resident Outdoor Learning Experiences; Grade 6; Gene Carroll, Co-ordinator.

Delta County School District 50 (J); The Cultural Relationship of Man to his Environment - Past, Present and Future; Grades K-12; L. L. Livingston.

Delta County School District 50 (J); Energy Crisis Aftermath or How to Survive with Coal on Your Doorstep; Grades K-12; District Office.

Denver School District R-1; Environmental Education Teacher In-Service; Grade K-12 teachers; John Brennan, Supervisor.

Denver School District R-1; Environmental Volunteers, Grades K-12; John Brennan, Supervisor.

Denver School District R-1; Environmental Education; Grades 8-9; John Brennan, Supervisor.

Denver School District R-1; Balarat Eco-Seminar; Grade 12; Balarat Center.

Denver School District R-1; One-Day Balarat Excursions; Grades 5 and 9; Balarat Center.

East Grand School District #2; Alternative Education - Outdoor; Grades 7-12; Wayne Benesch, Chairman, Alternative Education; Robert Bingham, Chairman, Outdoor Education.

Harrison School District 2; District-Wide Interdisciplinary Outdoor Education Program; Grades 4-6; John Stansfield, Pikes Peak Elementary School.

Holy Cross Abbey, Order of Benedictines; Rocky Mountain Ecology; Grade 10; John A. McPherson, Chairman.

Jefferson County School District R-1; Biological Sciences Curriculum Study Workshop; Grades 10-12; B. J. Meadows.

Jefferson County School District R-1; Earl Johnson School Site Curriculum Development; Grade 4; B. J. Meadows.

Jefferson County School District R-1; Elementary Science Revision; Grades 3-6; B. J. Meadows.

Jefferson County School District R-1; Energy Conservation; Grades K-12; District Office.

Jefferson County School District R-1; Environmental Community Resource Person; Grades K-12; B. J. Meadows.

Jefferson County School District R-1; Environmental Community Studies Program; Grades 10-12; B. J. Meadows.

Jefferson County School District R-1; Environmental Studies Day Camp; Grades 4-5; B. J. Meadows.

Jefferson County School District R-1; Environmental Living; Grades 10-12; L. M. Thomas.

Jefferson County School District R-1; Escalantee Canyon Eco-Trek; Teachers of grades 5-12; B. J. Meadows.

Jefferson County School District R-1; Extended Outdoor Education Experience (Ski-Touring); Grades 8-12; B. J. Meadows.

Jefferson County School District R-1; Float Trips, Grades 10-12; B. J. Meadows.

Jefferson County School District R-1; Forest Service Workshops; Teachers of grades K-12; B. J. Meadows.

Jefferson County School District R-1; Operation Sundance - Interdisciplinary Environmental Education through Domestic Solar Energy Technology; Grades K-12; Malcolm Lillywhite, Judy Zimmerman.

Jefferson County School District R-1; Resource Center; Grades K-12; B. J. Meadows.

Jefferson County School District R-1; Teacher Mini-Courses; Grades K-12; B. J. Meadows.

Park School District R-3; Mountain Emergency, Rescue and Survival Training; Grades 9-12; J. Gorden Rudel.

Platte Canyon School District R-1; Environmental Education Experience; Grades K-12; Ned Levine.

Platte Canyon School District R-1; Snowbound, Grades 3-6; Ned Levine.

Poudre School District R-1; Nature Center; Grades K-12; Owen Smith.

Poudre School District R-1; Resident Camp; Grade 6; Owen Smith.

St. Vrain Valley School District Re-1J; Environmental Discovery School II; Grades 7-12; Quentin Baker.

Steamboat Springs School District Re 2; Outdoor Educational Experience; Grades 3-5; Patrick Cunningham.

University of Northern Colorado Laboratory School; Man and His Environment; Grades K-12.

Westminster School District #50; Resident Outdoor Education Program; Grade 6; Mrs. Virginia Way.

Westminster School District #50; Multi-media Multi-disciplinary Resource Center (Education for Survival); Grades K-12; Mrs. Virginia Way.

Widefield School District 3; Summer Youth Environmental Program (SYEP); Grade 6; Leonard C. Bartel.

Other Environmental Education Activities

The 306 State Facilitator Project has also identified these environmental education activities currently active in Colorado:

Boulder Valley Institute:

(1) Desert Trip, for ages 15 to 21, a nine-day excursion to the high desert country of Utah is the setting for this experience. Backpacking, camping and desert survival are taught. Time is spent observing and often photographing the desert beauty as different habitats are explored.

The desert environment lends itself to a penetrating look into one's own being. This is assisted by structured solos, meditative periods and group communications.

(2) Mountaineering, for ages 15 to 21, which involves participation in any or all of:

a. A twice-weekly rock climbing course in which basic skills are taught and attention paid to the emotional responses which are evoked.

b. A twice-weekly wilderness experience elective in which seminars on the natural sciences will be given, basic awareness techniques will be practiced in the field, and a personal relationship with the mountains will be developed.

c. Numerous weekend trips with varying degrees of difficulty are offered. Basic backpacking and camping skills are taught, with an attention to practical conservation. Opportunities for map-reading, wild flower and edible plant identification, rock and snow climbing, geology, ski touring, and snowshoeing will be available in season.

d. A nine-day mountaineering trip concentrates on a major peak ascent and offers an extended opportunity for learning. Numerous stress situations focus attention on the human condition and the struggle for survival.

Colorado Outdoor Education Center:

The Center has developed programs in co-operation with: Colorado Springs School District 11; Academy School District 20; Eagle County School District RE 50J; Aspen School District 1; The Children's School of Colorado Springs; Colorado Deaf and Blind School; Colorado College; Colorado University; American Camping Association, Rocky Mountain Section; California State University Foundation for the Advancement of Environmental Education; University of Massachusetts Department of Education; Southwestern Librarians' Association; National Education Association; Audubon Society; Young Life (Houston and Dallas).

Programs are conducted at three Centers: the High Trails Outdoor Education Center, five miles southwest of Florissant, Colorado; the Big Spring Outdoor Education Center, 1½ miles from High Trails; and the Colorado River Outdoor Education Center near Gypsum, Colorado. Every week, students from several different schools and communities, representing diverse social, economic and cultural backgrounds, live together in cabins at the Centers. They attend Discovery Groups focusing on Rocks and Minerals, Ecology, Language Arts, Nature Crafts, Local History, Field Math, and Conservation. Each student is given the opportunity to explore further any area of special interest during free choice periods, including such activities as digging in copper mines and fossil beds, visiting an old working ranch, and participating in an extended orienteering course. Special morning and evening programs include talks by National Forest and Park Service personnel, astronomy, and many history- and nature-oriented campfire programs. A variety of recreational activities are offered. High school students who serve as counselors to the elementary students undergo a leadership program. The Centers also sponsor a number of special trips, programs and seminars, some designed for young adults and college freshmen.

A mobile Nature Wagon tours over forty elementary schools in the Colorado Springs area. It contains over 30 exhibits emphasizing awareness and use of the outdoors and is also equipped with a number of slide shows and learning kits which are used by classroom teachers. Nature games are played in the school yard. A reference library and equipment for experiments are available. K-6 students are conducted through the Wagon by an outdoor teacher and several junior and/or senior high student assistants.

Forest Service, U.S. Department of Agriculture:

A 32 to 40 contact-hour workshop designed to acquaint teachers and resource people with the latest process and problem-solving techniques for involving others in the study of environmental habitats, soils in land use planning, forest environments, water quality criteria and urban environmental systems.

The Forest Service provides each workshop participant with a handbook, Environmental Education for Teachers and Resource People, which contains lesson plan outlines, activity ideas, simulations, and a guide to developing individual environmental investigations. These materials are available only through the workshop.

Information source: Gary J. Severson, Environmental Education Officer, Forest Service, USDA, Rocky Mountain Region, P.O. Box 25127, 11177 West 8th Avenue, Denver, Colorado 80225.

National Park Service:

Areas in natural, historical or recreational parks which exemplify man's impact on nature (and vice-versa), called National Environmental Study Areas (NESA), are available for class field trips. The manuals contain general information about the NESA which will aid the teacher in planning the field trip. Speakers are available for classroom presentations. The Service will lend environmental education films at no charge for one week for showing to school classes.

Information source: William L. Featherstone, Environmental Education Co-ordinator, National Park Service - Rocky Mountain Regional Office, Box 25287, Denver, Colorado 80225, (303) 234-3111.

Soil Conservation Service:

Service staff can give assistance in planning and developing outdoor classrooms, conduct workshops for teachers, and conduct class field tours. Slide presentations are also available.

Information source: Soil Conservation Service, State Conservationist Office, 2490 West 26th Avenue, Denver, Colorado, Administrative staff: (303) 837-3947.

Bureau of Reclamation, U.S. Department of the Interior:

The Engineering and Research Center houses an engineering reference library, which is open to the public, and a film library, containing 16 mm films available on a loan basis (the borrower paying return postage only), as well as two slide programs, "The Reclamation Story" and "Reclamation Research." Schools may schedule tours of the laboratory facility, where classes can see numerous engineering and scientific tests conducted and a demonstration of one of the several working hydraulic structure models (a dam, spillway or canal).

Information source: Warren B. McBirney, Chief, Technical Services and Publications Branch, Bureau of Reclamation, Engineering and Research Center, Attention: 922, P.O. Box 25007, Denver Federal Center, Denver, Colorado 80225.

National Recreation and Park Association:

Conducts workshops, forums and training institutes for its members. Activities include programs for the development and upgrading of professional standards; a personnel referral service; dissemination of innovations and research; consumer protection; program development and technical assistance to members and to all Federal, state, county and city agencies.

Current (1975) programs involve, among others, improved facilities and programs in correctional institutions, playground safety, new public school curricula in leisure, and support for land use reform.

Information source: Frank D. Cosgrove, Director, NRPA Western Service Center, P.O. Box 6900, Colorado Springs, Colorado 80934.

Bureau of Land Management:

Distribution of natural resource management and environmental education materials; participation in field workshop. Slide presentations and discussion of natural resource/environmental topics with classes (depending on workload). Assistance in developing environmental education areas. Information source: Fil Jiminez, Denver Office, Bureau of Land Management, 1600 Broadway, Room 700, Denver, Colorado 80202 (303) 837-4481.

Western Regional Environmental Education Council

The Western Regional Environmental Education Council was founded in 1970 to bring together state education and resource management agency personnel with responsibilities in the field of environmental education for the purpose of encouraging the development of good programs at all levels, and coordinating activities on a regional basis. A four-year grant was obtained from USOE (ESEA Title V, Section 505) to facilitate the work of the Council. In 1973 a grant was obtained from the American Forest Institute through which the Council is developing a K-12 curriculum package on forest conservation.

States participating are: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

The Council has incorporated as a nonprofit corporation, and intends to continue its work in the years ahead.

The Council meets twice a year in one of the member states, usually for five working days. Committee meetings are held as needed. Specific activities in which the Council participates include:

> State Programs: Developing roles and responsibilities for state resource management and education agency personnel, cooperative relationship, state planning.
>
> In-service Training: Each meeting includes at least one day devoted to activities to extend and upgrade the skills of all participating members. Materials and plans for local workshops are also provided.
>
> Informational Exchange: Delegates report on the activities of their agency at each Council session and new materials are distributed and discussed. In addition, the project director serves as a means of two-way communication between the Council, other ESEA V projects, and appropriate governmental and private agencies.
>
> Regional Program Coordination: Several programs have been conducted which involve the participation of all 13 member states on a cooperative basis. A number of activities involving two or three neighboring states have also been conducted.

WREEC members discuss current issues in the environmental educational field and frequently pass resolutions which are forwarded to various agencies and/or officials for their information and guidance.

WREEC has conducted a number of activities resulting in the development of materials for use in all participating states. These products include guides for the development and use of environmental education materials, a regional environmental education state program status report, and a mini-grant program to encourage the development of worthwhile local projects. A newsletter is produced twice a year and distributed nationwide, and work is being completed on a K-12 forest conservation instructional package.

WREEC Council members have developed a number of recommendations for programs and activities which they would be willing to participate in or conduct in cooperation with appropriate agencies.

The WREEC project has helped develop a strong cooperative working relationship between state education and resource management agencies. A similar relationship involving federal agencies operating within the 13 state area is one of our high priority objectives.

A cooperative national organization through which materials and ideas could be exchanged and some national planning and coordination accomplished is seen as another important need in the field.

Public support for environmental education programs at all levels is essential. A program to identify possible areas of support and to develop a strong public image for this study area is needed.

Workshops for teachers, school administrators, community leaders, resource agency personnel and covering a number of specific skills are needed. Subjects might include: How resource agencies and other organizations can prepare effective materials for school use, conducting teacher workshops, how to prepare and evaluate media presentations, and organizing and utilizing community support for environmental education programs.

An informed but impartial national group to review and advise commercial publishers and others who produce environmental education materials would be valuable. In this way time and money wasted on overlaps, duplications, and materials which just are wide of the mark might be eliminated.

A consultant service and accreditation procedure for state plans would be valuable and could save each state a great deal of unnecessary work.

WREEC possesses two valuable assets which could form an important part of any of the above projects or activities. These are (1) 26 members with a variety of skills and knowledge in the environmental education field and (2) a means of contacting and working with schools and state resource management personnel in 13 western states.

Current president of WREEC is: Dick Hess, Western Regional Environmental Education Council, Colorado Division of Wildlife, 6060 Broadway, Denver, Colorado 80216, (303) 825-1192.

- George A. Ek
Conservation Programs
Department of Education
Development and Demonstration Unit
201 E. Colfax, State Office Building
Denver, Colorado 80203
(303) 892-3382

November 1975

CONNECTICUT

Environmental Education Legislation

A bill requiring school districts to include environmental education as an offering in their instructional programs failed to pass the legislature for the third consecutive year. A new piece of legislation is being drawn and will be submitted again this year.

Activities in Environmental Education

Over the past year a number of activities have taken place in environmental education in Connecticut.

ESEA, TITLE III, PROJECT

Project Oceanology, a regional educational project started under Title III, ESEA, has proved its worth and is now supported entirely by the local school districts it serves. This project, which deals with the marine environment, is immensely popular. Activities related to the biological and physical characteristics of Long Island Sound are studied as well as the cultural aspect and the impact of man on the coastal zone. Over 10,000 youngsters took part in the program last year. Workshops for teachers sponsored by the project and by the National Science Foundation were held. The project has also received grants from NEED and USOE to help carry out its activities.

CBRU's

Last academic year Connecticut, through the Northeast Environmental Education Development Consortium (NEED), distributed 100 Computer Based Resource Units (CBRU's) in environmental education to teachers in the state. These units, designed for specific classes of students and for specific topics, were developed by the New Jersey Council for Environmental Education.

The units were very well received and led to a cooperative effort this year between the State Departments of Education and Environmental Protection. CBRU's will be distributed at no cost to 1000 teachers throughout the state. A further evaluation will be performed on the success of these units as teacher aids and a decision will then be made as to a yet greater distribution in following years.

LAND USE CONFERENCES

Two conferences on land use were sponsored by the Connecticut State Council on Environmental Education. These conferences were open to educators, legislators, town managers, representatives of business, industry, land developers and the members of the legal profession. Interest in this topic was quite high with about 200 participants at each conference.

ENERGY CONSERVATION

Five workshops on energy conservation were held in conjunction with the Bolton Institute under a grant from the Federal Energy Administration. These workshops attracted some 250 teachers and students. Topics ranged from ways in which to conserve energy to ideas and activities involving alternative energy sources.

FOUR-COLLEGE COOPERATIVE PROGRAM

In-service workshops for teachers continue to be held during the school year and during the summer. Notable this year was a four-college cooperative program offering instruction in the environmental "processes". The workshop for approximately 100 teachers was held at one of the state forests. Instructors included college personnel and members of the U.S. Forest Service.

- Dr. Sigmund Abeles
Consultant in Science Education
State Department of Education
P.O. Box 2219
Hartford, Connecticut 06115
(203) 566-4825

October 1975

DELAWARE

State Plan

The state plan, Environmental Education in Delaware, was developed in 1972 by the Delaware Conservation Education Association in cooperation with the Delaware Department of Public Instruction and the Population Curriculum Project at the University of Delaware.

The theme of the plan is "Man is a part of a natural system, the earth, and is ultimately subject to the limits of the system." Activities and programs are aimed at developing not only an awareness and appreciation of the theme, but also the development of the behavior necessary to insure that the system continues to support both its human and non-human inhabitants.

The five-year goal of the plan is for all citizens of Delaware to develop attitudes in harmony with the aforementioned theme. The plan has reached a stable position, not expanding, not decreasing.

Environmental Education Legislation

The State of Delaware has provided funding for approximately 75 students to participate in a Youth Conservation Corps Program, 30 work hours and 10 study hours per week.

Certification

At this point no environmental education certifications exist as such. However, all teachers entering the field of teaching in any science area must have three credit hours of environmental studies. It is projected that certification in environmental education will exist in the future.

State Coordinator

John F. Reiher, State Supervisor, Science and Environmental Education, Delaware Department of Public Instruction, John G. Townsend Building, Dover, Delaware 19901. (302) 678-4885

Advisory Committee

A combination advisory committee for science and environmental education exists and meets at regular intervals throughout the years.

Publications

Equinox V; Environmental Education - the guidelines for teaching environmental education in Delaware schools. Price $3.00 from:

Del Mod System
c/o John F. Reiher
P.O. Box 395
Dover, Delaware 19901

This guide was approved by the State Board of Education as the guide for environmental education in Delaware.

Relations; Environmental Education Newsletter - available free upon request from:

Thomas M. Baker
Delaware Department of Public Instruction
John G. Townsend Building
Dover, Delaware 19901

Environment and You; Transparency series for elementary students. Baker, Thomas N. and Reiher, John F. Available from Robert J. Brady Co., Bowie, Maryland. Price $7.95 per book.

Developing an Outdoor Classroom; guide for developing an outdoor study area. Delaware Department of Public Instruction and Soil Conservation Service, John G. Townsend Building, Dover, Delaware 1990. Free

Exemplary Public School Activities

No ESEA grants are currently operative in Delaware. Wesley College, Dover, Delaware has a mini-grant for environmental seminars under P. L. 91-516. Contact Terry Higgins.

Other programs include:

The Sea Beside Us for the Special Child, Milford School District, Milford, Delaware. Contact Helen Hollinger.

Youth Conservation Corps - approximately 75 high school students. Contact John F. Reiher, John G. Townsend Building, Dover, Delaware 19901.

Outdoor Environmental Center - Newark School District, Newark, Delaware 19711. Contact Dennis Reilly.

Environmental Lab - New Castle-Gunning Bedford School District, New Castle, Delaware 19720. Contact Roger Daum.

Gripin, Energy Learning Center - Appoquinimink School Districk, Odessa, Delaware. Contact Jim Allen. Funded by DelMarVa Power and Light Company.

College and University Activities in Environmental Education

No "special" teacher education programs are known.

The Department of Agriculture at the University of Delaware offers several courses in conservation that are excellent as background information for teachers.

Inter-Agency Cooperation

A cooperative effort exists between the Delaware Department of Public Instruction and the following agencies or groups for the purposes indicated:

Department of Natural Resources and Environmental Control, Youth Conservation Corps

Delaware Academy of Science, Mobile Natural History Museum

Delaware S.P.C.A., Environment for Teachers

DelMarVa Power and Light Company, Gripin Energy Learning Center

Delaware Jaycees, Environmental Improvement Program

U.S. Army Reserve, Severe Weather Project

The Delaware Department of Public Instruction is the agent responsible for all activities that occur in the schools of Delaware. Information concerning programming, guidelines, staffing, etc. or any environmental education project in the Delaware School System is available from John F. Reiher, State Supervisor.

- John F. Reiher, State Supervisor
Science and Environmental Education
Delaware Department of Public Instruction
John G. Townsend Building
Dover, Delaware 19901
(302) 678-4885

August 1975

DISTRICT OF COLUMBIA

State Plan for Environmental Education

The District of Columbia does not have a State Plan for Environmental Education. A Planning Committee for Environmental Education received a grant in 1972 under Public Law 91-516 for the purpose of developing a State Plan. However, by the time the group was ready to begin, the Office of Education had changed its focus and suggested other activities for the use of the funds.

The Public Schools have a plan which was developed under a grant from ESEA, Title III. The Department of Science, Division of Instructional Services, initiated the idea and was designated by the administration as the office to be responsible for environmental education in the schools. (See below for more information).

Environmental Education Legislation

The District of Columbia City Council has passed no environmental education legislation. The Education Committee is inviting citizen input for the development of such legislation.

Teacher Certification

It is the feeling in the District of Columbia that environmental education should be infused into all subject areas and not be a separate discipline. As such there are no certification requirements and no plans to have any. The Department of Science has qualified personnel to coordinate and supervise environmental education activities and this function is handled through that office with cooperation from the supervisory staff in the other disciplines. There is no official position of Supervisor of Environmental Education and no certification requirements for such.

State Coordinator for Environmental Education

Ethel J. Hackney, Assistant Director, Department of Science, Director of Urban Environmental Education Project is State Coordinator for Environmental Education. Carol Euston and Madeline Foreman are program developers for the Urban Environmental Education Project.

Activities of the Urban Environmental Education Project are:

1. Arranging out-of-classroom learning experiences for students.

2. Publishing the Enviroline, a bulletin containing environmental information and activities.

3. Collecting, screening, and distributing a variety of resource materials.

4. Arranging technical assistance for schools.

5. Funding and carrying out Mini-Grant Projects in schools.

6. Providing in-service training for teachers.

7. Providing curriculum materials in environmental education.

8. Serving as a liaison between the schools and other groups and agencies working in environmental education.

9. Serving as a Resource Center and Environmental Information Clearing House.

Address: Urban Environmental Education Project, Watkins School, 12th and E Streets, S.E., Washington, D.C. 20003, (202) 724-4783.

Environmental Education Advisory Boards

The Urban Environmental Education Project has an Advisory Council. There is no Advisory Council on Environmental Education for the city.

Environmental Education Publications

1. Energy - Information for teachers and sample activities for teaching energy concepts to elementary school children.

2. Mapping Your Environment - Activities for developing mapping and measurement skills in elementary school children.

3. Reading and Environmental Science - Suggestions and activities for teaching reading to elementary school children using science and environmental education as vehicles.

4. American Government - Emphasizing Environmental Education - A senior high school course in American Government showing how government has affected the environment and vice versa.

5. American History - Emphasizing Environmental Education - A senior high course in American history which brings out ways in which citizens' actions have affected the environment and how the environment helped to shape the history of this country.

6. Sociology and the Environment - A senior high course in sociology which shows how the culture and behavior of a people are interwoven with their environment.

7. Economics and the Environment - A senior high course in economics showing the effects of the environment on economics and vice versa.

8. Developing English Skills Through Environmental Education - Activities to develop reading, writing, discussion and listening skills in secondary students using readings in environmental education.

9. Environmental Education in Mathematics - Problems to teach mathematics skills to grades 6-9 using environmental education situations.

The above publications are in draft form for use in the District of Columbia Schools. They will be available for more general distribution at a later date. Work is also in progress on supplementary materials for use in biology, chemistry, general science, geography and elementary classes.

Exemplary Public School Activities

ESEA, Title III - URBAN ENVIRONMENTAL EDUCATION PROJECT

This project, whose activities are listed above, serves the entire school system. The project is in its fourth, and demonstration year. In the spring of 1975 it was validated as an outstanding project through the United States Office of Education's process of Identifying, Validating, and Disseminating (IVD) information about exemplary programs.

ESEA, Title VII - ROUND MEADOW OUTDOOR LABORATORY SCHOOL

Eight sixth grade classes from the Public Elementary Schools of the District of Columbia live and study at the school each week. During the course of the week each student participates in approximately 18 hours of academic investigation of four predominant aspects of the environment - woodland ecology; stream ecology; geology; and customs, traditions and culture of early settlers. Each student is involved in one area of study per day which includes both trail and classroom activities. About 2½ hours are utilized in classroom settings where follow-up activities, requiring application of the basic concepts taught on the trail, are provided.

The school is located at Camp Round Meadow, a former Job Corps Center in the Catoctin National Park, Thurmont, Maryland. The National Park Service gives free use of the facilities and provides maintenance.

Project Coordinator: Lucille Leisner, Watkins School, 12th and E Streets, S.E., Washington, D.C. 2003, (202) 724-4781.

ESEA, Title VII - RHODE RIVER ENVIRONMENTAL EDUCATION PROJECT

Forty secondary students each week live and study environmental education at Camp Letts which is located on the Rhode River and Chesapeake Bay in Edgewater, Maryland. The Y.M.C.A. of Metropolitan Washington is the contractor for this program. Project Coordinator: Sandra K. Fuller, Y.M.C.A., Camp Letts, P.O. Box 208, Edgewater P.O., Maryland 21037. (202) 462-4286

LOCALLY FUNDED - CITY-WIDE BEAUTIFICATION PROJECT

Schools wishing to improve their grounds receive technical and material assistance. All labor, except especially heavy jobs, is performed by the students as a learning experience. Project Coordinator: Sylvia K. Shugrue, Department of Science, 415 - 12th Street, N.W., Washington, D.C. (202) 737-0980

PROGRAMS CARRIED OUT IN SCHOOLS BY FEDERAL AGENCIES

1. Operation Lightship - The National Park Service has converted a retired Lightship to a floating environmental education laboratory. Two classes of elementary students and two groups of secondary school students each week spend a day studying the ecology of the Potomac River and its importance to the Washington area. Project Coordinator: Bart Truesdell, National Capital Parks, U.S. Park Service, 1100 Ohio Drive, S.W., Washington, D.C. 20242. (202) 426-6896

2. Rock Creek Nature Center - Three days each week elementary school students, under the auspices of Center personnel, study the following concepts: 1) everything has a home, 2) everything has a job, 3) all living things are interdependent. Other topics of interest to the group are also included. Director: Robert Ford, Rock Creek Nature Center, Military and Glover Roads, N.W., Washington, D.C. 20016. (202) 426-6829

3. Fort Dupont Activity Center - National Capital Parks - Staff members take programs into the schools on request. Topics covered are: Web of Life Concept, Environmental Arts and Crafts, Animal Interpretation, and Nature Walks on School Grounds. Classes are also served at the Center. Director: Ben Brown, Fort Dupont Activity Center, Fort Dupont Park, Washington, D.C. (202) 426-7745

4. Other National Capital Park Facilities - Programs for school children are also carried on at Fred Douglass Home, Kenilworth Aquatic Gardens, and Oxon Hill Children's Farm. Contact Mr. Ira Hutchison, National Capital Parks East, 5210 Indian Head Highway, Oxon Hill, Maryland. (202) 426-6917

5. Johnny Horizon Program - This Interior Department Program provides teaching materials to be used in Clean-up America campaigns. Contact Clayton Anderson, Johnny Horizon Program, 1951 Constitution Avenue, N.W., Washington, D.C. (202) 343-6101

6. Environmental Protection Agency - Programs showing causes and effects of pollution, what the government is doing to protect the environment and what individuals and groups can do are regularly shown to groups of students in the Visitor Center. Contact Delores Edmonds, EPA Visitor Center, 401 M Street, S.W., Washington, D.C. 20460. (202) 755-0713

7. United States Soil Conservation Service - This agency provides a variety of printed materials to schools. In addition the services of a Soil Conservationist are provided to schools to assist them with school yard improvement projects. Contact Mrs. Katherine Mergen, Head, Educational Relations, U.S. Soil Conservation Service, U.S. Department of Agriculture, South Building, Washington, D.C. (202) 447-5973

Utility Company Programs

1. Washington Gas Company provides speakers, film loan and literature on all aspects of natural gas energy. Educational Services Coordinator - Patricia Woolsey, 1100 H Street, N.W., Washington, D.C. 20080. (703) 750-4721

2. Potomac Electric Power Company provides films, posters, booklets and teaching kits on electrical energy. 1900 Pennsylvania Avenue, N.W., Washington, D.C. (202) 833-7500

College and University Activities in Environmental Education

THE AMERICAN UNIVERSITY offers two courses in the school of education for pre-service teachers. Environmental education is required of all Masters and Doctoral candidates. They also have cooperative programs with the Marine Science Consortium at Lewes, Delaware, and Wallops Island, Virginia. Field courses are offered in the summer. Contact Robert J. Chinnis, Director of Graduate Studies, School of Education, American University, Washington, D.C. 20016. (202) 686-2188

FEDERAL CITY COLLEGE offers environmental education through its Science Department. They have cooperative programs with the D.C. Public Schools, the D.C. Department of Human Resources, NIH, EPA, and the D.C. Department of Recreation. Contact Julius Mack, Dean, School of Natural, Applied, and Health Sciences, 425 2nd Street, N.W., Washington, D.C. (202) 727-2370

HOWARD UNIVERSITY - The new School of Human Ecology will be offering a major and a minor in Environmental Studies and a major in Population Ecology. The focus of the Environmental Studies major is the biophysical environment, and the interdependence of the quality of the environment. The Population Ecology curriculum is concerned with the interactions between human populations on the one hand and environment, social systems, and life style on the other.

City Government

The Department of Environmental Services sponsors a Junior Environmental Team (JETS) Program to engage early teenagers in the clean-up and preservation of their environments. Contact William McKinney, Director, Department of Environmental Services, 415 12th Street, N.W., Washington, D.C. 20004. (202) 629-3415

Other Environmental Education Activities

CONCERN, INC. published Eco-Tips and an environmental calendar to educate the consumer on environmental matters and to encourage intelligent action by groups and individuals. Mrs. Margaret Mickey, President, 2233 Wisconsin Avenue, N.W., Washington, D.C. (202) 965-0066

CURB (Citizens United to Remove Blight) - A citizen organization whose purpose it is to help citizens clean up and improve their neighborhoods. Mrs. Helen Mitchell, Director, 774 14th Street, N.W., Room 439, Washington, D.C. (202) 727-3036

D.C. LUNG ASSOCIATION - Works with community and schools for the eradication of tuberculosis, control of respiratory diseases, control of air pollution and the elimination of smoking. The Association supplies materials for use in classes to schools and sponsors a variety of programs in the schools for student participation. Contact Josephine Butler, Coordinator, Public Health Education Programs, 1714 Massachusetts Avenue, N.W., Washington, D.C. (202) 785-2444

METROPOLITAN WASHINGTON COALITION FOR CLEAN AIR - Carries on a variety of programs to educate citizens about the dangers of air pollution and to teach citizens what they can do to alleviate the problems. Contact John Embick, Director, 1714 Massachusetts Avenue, N.W., Washington, D.C. (202) 785-2444

AUDUBON NATURALIST SOCIETY OF CENTRAL ATLANTIC STATES, INC. - Provides an eight-week program to help city children use the environs of their schools as a learning resource. Volunteers from the society work with the teachers and children. Contact Allan Morich, Director of Environmental Education, 8940 Jones Mill Road, Chevy Chase, Maryland 20015. (301) 652-5964

ZERO POPULATION GROWTH - Working with grants from EPA and private foundations, this organization is seeking to introduce and expand population education to students, teachers and supervisors in three to five states. Elaine Murphy, Director, Population Education Project, 1346 Connecticut Avenue, N.W., Washington, D.C. 20007. (202) 785-0100

NATIONAL WILDLIFE FEDERATION - Federation helps teachers, students and the general public become more aware of the needs of wildlife and the importance of wildlife in the total environmental scheme, provides teacher kits and teacher workshops. John C. Stone, Coordinator, Educational Services, 1412 16th Street, N.W., Washington, D.C. 20036. (202) 790-4433

ADAMS MORGAN ORGANIZATION ENVIRONMENTAL COMMITTEE - A community effort to improve a neighborhood through beautification, tree planting, clean-up, recycling, street improvement and the education of the citizens of the area as to the importance of the projects and their responsibility to participate. Edward Jackson, Chairman of Environmental Committee, 2460 Ontario Road, N.W., Washington, D.C. (202) 667-8020

RESOURCES FOR THE FUTURE - Organization performs basic research including the appraisal and interpretation of significant resource and environmental situations, trends, and policy alternatives and the institutional factors that affect them, or supporting such research by university and other scholarly institutions. Results are made available to administrators, businesses, teachers, and all interested citizens. Contact Kent A. Price, Information Officer and Assistant to the President, 1755 Massachusetts Avenue, N.W., Washington, D.C. 20036. (202) 464-4400

Projects Funded Under P.L. 91-516

1. Personnel Development - American Institute of Architecture, 1735 New York Avenue, N.W., Washington, D.C. 20006

2. Resource Materials Development - Conservation Foundation, 1717 Massachusetts Avenue, N.W., Washington, D.C. 20036

3. Personnel Development - Zero Population Growth, 1346 Connecticut Avenue, N.W., Washington, D.C. 20036

4. Resource Materials Development, National Council for Public Assessment of Technology, 1714 Massachusetts Avenue, N.W., Washington, D.C. 20036

- Ethel J. Hackney, Director
  Urban Environmental Education Project
  Watkins School
  12th and E Streets, S.E.
  Washington, D.C. 20003
  (202) 724-4783

October 1975

FLORIDA

Master Plan for Environmental Education

The Florida Master Plan and Action Guide for Environmental Education was published in 1971 and revised in 1972. The plan was published by the Department of Education and adopted as a state plan by the Commissioner of Education. The plan was written by the state coordinator after input from public and private agencies and organizations and from consultants representing all academic disciplines within the Department of Education.

The plan is a comprehensive guide to all areas of environmental education. It includes educational goals, objectives, administrative structure, a survey of environmental education activities in Florida, and recommendations for a comprehensive state program.

During 1975-76 a complete revision of the Master Plan will provide time lines and budgetary goals for the full implementation of Florida's state program. The plan will also include in-depth plans for teacher training, environmental manpower training, and plans to facilitate the involvement of teacher training centers and community schools into the state program.

Florida Environmental Education Acts

The Florida Environmental Education Act of 1970 established within the Department of Education a professional coordinator, support staff and a budget of approximately $70,000 to begin the development of a state program.

The Environmental Education Act of 1973 established the Bureau of Environmental Education in the Department of Education, consisting of six professional and two supportive staff. The act also provided $230,000 in operating funds and $300,000 for mini-grants to schools and school districts to be used to develop outstanding environmental educational programs and materials.

The Environmental Education Act of 1975 established the Office of Environmental Education on the staff of the Commissioner of Education. A budget of $460,000 was provided for operations and mini-grants. The act provides the office with the powers and duties to integrate environmental education concepts in all disciplines at all grade levels. It requires that the office provide the legislature with an annual estimate of the environmental employment needs for Florida.

Teacher Certification

Florida's environmental education program is interdisciplinary. For this reason there is no need or effort to provide certification. We have in the Florida constitution a requirement that conservation of natural resources be taught in our public schools.

Staff, Office of Environmental Education

C. Richard Tillis - (904) 488-6547 (48) (49)
Director, Office of Environmental Education
Administers State Environmental Education Program, Environmental Manpower Program, and Youth Conservation Corps.

Ms. Susan Fowler - (904) 488-6547 (48) (49)
Secretary for Office of Environmental Education

Paul A. Coley - (904) 488-5647 (48) (49)
Coordinator, Environmental Education

James M. Phillips - (904) 488-5647 (48) (49)
Coordinator, Environmental Education

R. Frank Kapp - (305) 737-1697
Coordinator, Environmental Education

The State Environmental Education Advisory Council has been active since 1971. It is a product of legislation. Its purpose is:

a. Provide a channel for inventorying, reviewing, motivating and supporting environmental education.
b. Formulate and recommend state-wide policies in environmental education.

The members are:

Lehman Barnes	Professor, Florida State University, Teacher Educator
Harriet Deissler	Teacher, Woodham High School, Public School Teacher
Donald Dunlop	Vice President, Florida Power and Light, Inc., Industry
Earl Frye	Director, Game and Freshwater Fish Commission, Public Conservation Official
Hank Giordano	Board of Regents, Academic Program Development and Continuing Education
Arthur Godfrey	Entertainer-Conservationist, Information Media
D. Robert Graham	Chairman, Senate Education Committee, Legislator
William Hammond	Environmental Education Consultant, Lee County Public Schools

Warren Henderson	Florida Senate, Legislator
Homer Hooks	Director, Florida Phosphate Council, Industry
Mallory Horne	President, Florida Senate, Legislator
Aquilina Howell	Director of Secondary Education-Leon County Public Schools
John C. Jones	Director, Florida Wildlife Federation, Private Conservation Official
Herman Kranzer	Professor, University of West Florida, Teacher Educator
Joel Kuperburg	Director, Internal Improvement Trust Fund, Public Conservation Official
A. S. Robinson	Florida Legislature, Legislator
Hal Scott	Director, Florida Audubon Society, Private Conservation Official
Kimberley Shows	High School Student-Escambia County, Public School Student
John Stefany	American Institute of Architects, Industry
Evelyn Waybright	Florida Federation of Women's Garden Clubs, Private Conservation Official
Joe Marlin Hilliard	Farm Business Representative, Clewiston, Florida

Environmental Education Publications of Florida Department of Education

Department of Education. Anti-Litter Curriculum Packet. Tallahassee: Department of Education. (Undated)
Glenn Glitter has 15 interdisciplinary activities that are adaptable for any grade level. This packet is designed to develop positive attitudes towards a clean environment by involving students with projects centered around litter.

Department of Education. Computations about the causes and effects of pollution. Tallahassee: Department of Education. (Undated)
This handbook contains exercises designed to improve mathematical skills usually taught in middle schools. Mathematical strands are used to help quantify environmental problems and the suggested projects encourage student research and involvement. Exercises are designed around actual Florida pollution problems and present a realistic view of the amounts of pollutants in our environment.

Department of Education. Environmental Education Reporter. Tallahassee: Department of Education. (Periodically issued)
This occasional newsletter contains current information on environmental education happenings in Florida. Notices of workshops, meetings of interest, recent publications, and new environmental education projects are also included in this newsletter.

LaHart, David E. "Florida's Endangered Dozen," Florida Wildlife Magazine, February 1973, pp. 15-22.
Rare and endangered animals are of interest to all age groups. This article discusses 12 species that are hovering on the brink of extinction and what men are doing to save them. A color centerfold makes this reprint excellent bulletin board material.

Tillis, C. Richard. The Florida Master Plan and Action Guide for Environmental Education. Tallahassee: Department of Education, 1971.
The master plan outlines Florida's goals and objectives for the coming year. It includes a step-by-step approach to developing an environmental awareness in the citizenry of Florida by using public schools.

Exemplary Public School Activities

Curriculum Modification through Environmental Studies
Martin County Schools
Environmental Science Center
Indian River Drive
Jensen Beach, Florida 33457

Interdisciplinary Environmental Education
Broward County Schools
3600 S.W. College Avenue
Ft. Lauderdale, Florida 33314

Environmental Field Studies Program
Lee County Schools
2266 Second Street
Ft. Myers, Florida 33901

Broad Spectrum Environmental Education Program
Brevard County Schools
705 Avocado Avenue
Cocoa, Florida 32922

Environmental Learning Laboratory
DeSoto County Schools
c/o DeSoto County Middle School
Arcadia, Florida 33821

In addition to the above, 405 exemplary environmental education programs have been recognized and funded by the Office of Environmental Education on the staff of the Commissioner of Education. Information on these projects may be obtained from the Office of Environmental Education.

College and University Activities in Environmental Education

All of Florida's state universities offer teacher training courses in environmental education. None offer first professional degree programs since our interdisciplinary approach does not call for certified teachers. A university coordinator at each center assists the Department in its teacher training development and in coordinating school district/university matters related to environmental education.

Resource Agency Activities in Environmental Education

State resource agency heads are members of the state advisory council. Our legislation provides the authorization and power to coordinate the activities of such agencies with those of private conservation organizations and the state public school system.

- C. Richard Tillis, Director
Office of Environmental Education
Florida Department of Education
Knott Building
Tallahassee, Florida 32304
(904)488-6547 Ext. 48

September 1975

GEORGIA

State Plan for Environmental Education

No comprehensive Environmental Education Plan has been adopted. A report, Survival with Dignity, of the Georgia Environmental Education Advisory Council to the Georgia Legislature was published in January of 1975. An extensive plan was prepared by the Council, but has not been published, nor did the State Legislature take any action on the proposals made in the published report.

Legislation

The Environmental Education Act of 1974 (HB 1395) established the Environmental Education Advisory Council and required the Council to develop a master plan for environmental education for Georgia citizens. The ad hoc Council was disbanded with the completion of the report of findings and recommendations to the legislature.

Teacher Certification for Environmental Education

None adopted, none proposed and none anticipated. A concerted effort is being made to reduce the extensive proliferation of teacher and educational supervision certification specialities.

State Coordinator for Environmental Education

In the Department of Education, the responsibility for Environmental Education has been assigned to the Science Education Office: Dallas Stewart, Environmental Education, Georgia Department of Education, Atlanta, Georgia 30334. (404) 656-2576

Environmental Education Advisory Boards

Georgia Environmental Education Council, c/o Forestry Commission, Riggins Mill Road, Macon, Georgia 31201, annually sponsors three week summer workshops for teachers on two college campuses. No other general councils in Environmental Education are active.

Environmental Education Publications

Survival with Dignity: A legislative summary of the Environmental Education report. Source: M. B. Morehead, Georgia Department of Natural Resources, Atlanta, Georgia 30334. 16 pp. Free while supply lasts. Will not be reprinted.

Directions of Environmental Education in Georgia: Defines environmental education, establishes need for environmental education and suggests means of accomplishing environmental education goals. Source: Dallas Stewart, Georgia Department of Education, Atlanta, Georgia 30334. 16 pp. Free.

Georgia Environmental Education Newsletter: Source - Environmental Education Materials Center, c/o Dr. Robert N. Saveland, 203 Dudley Hall, University of Georgia, Athens, Georgia 30602.

Exemplary Public School Activities

Fernbank Science Center
Lewis Shelton, Director
156 Heaton Park Drive, N.E.
Atlanta, Georgia 30337

Environmental Education Project
Mrs. Cora Kay Blackwelder, Director
Atlanta Public Schools
771 Lindbergh Drive, N.E.
Atlanta, Georgia 30324

Oatland Island Environmental Education Center
Mr. Anthony Cope, Director
Savannah-Chatham County Board of Education
208 Bull Street
Savannah, Georgia 31401

Okefenokee Science Center
Dr. Al Woodard, Director
Route 5, Box 406
Waycross, Georgia 31501

College and University Activities

ESS 620 Social Science Education and Environmental Problems is being offered for the fifth consecutive year through the in-service program of the College of Education of the University of Georgia. This is a field study of land-use problems of mountains, piedmont, coastal plain and urban Georgia relating regional planning, legislation and citizen action, new towns, and aesthetic and ethical considerations to curricular content and teaching methods of the social sciences. Fifteen travel scholarships for this course have been provided by the Georgia Power Company.

The University of Georgia's Institute of Natural Resources with its Marine Extension Center, Skidaway Island and the Institute of Ecology with its Savannah River Environmental Laboratory are nationally known for work on environmental frontiers. A new dormitory facility has been constructed at Skidaway Island. For information on their educational program contact: Will Hon, Skidaway Institute, P.O. Box 13687, Savannah, Georgia 31406.

The United States Office of Environmental Education has funded a curriculum development and implementation project at the University of Georgia for 1975-76. The grant of $33,904 was made under the Environmental Education Act, Public Law 91-516 (1970) as amended by Public Law 93-278 (1974).

The project, Environmental Education for the Secondary School, will require the joint efforts of a team of social science and science educators in developing coordinated interdisciplinary instructional materials to be used in science and social science classes in high school.

The Gwinnett County School District (Lawrenceville, Georgia) is actively involved in the development plans for the project. Its high schools will serve as planning and implementation sites. Project staff will work closely with the Gwinnett teachers. Coordinator for the school district is Richard Johnson, Secondary Education Director.

The director of the project is Dr. Mary Hepburn of the University's Social Science Education Department. Dr. Jack Shrum will serve as the Science Education Coordinator.

The Georgia Environmental Curriculum Studies Project has developed nine instructional modules concerning environmental quality problems for primary grade pupils (Grades 1-3). Three modules for each grade level, each containing approximately four weeks of instructional plans, have been developed around the topical strands of man-land, man-water, and man-air relationships. Conceptual strands include the environment as a support system for life (Grade 1), pollution of the environment (Grade 2), and management of environmental resources (Grade 3).

The modules identify and teach basic concepts and problems in environmental education but also include an "action" component which moves many student activities from the classroom to the environment outside the school.

Skill development was incorporated by relating key ecological and environmental management concepts to existing science and social science programs as well as other segments of the curriculum. The Hilda Taba Model of Concept Formation, Interpretation of Data, and Application of Principles and the productive-divergent thinking behaviors enumerated by the National Schools Project provide the format for activities in the modules.

A teachers handbook has also been developed to orient teachers to the teaching strategies utilized in the modules and assist them in carrying out these strategies.

As part of the continuing concern to reach all children with an environmental action message, a 15 minute color video tape has been produced under the sponsorship of the National Council for Geographic Education. Funds for the project were awarded by the United States Office of Environmental Education, USOE. The tape, user's guide, and teacher's guide will be available this Autumn to selected schools for evaluation purposes. A primary school teaching team in Athens, Georgia, is working on another printed instructional model, "Energy", which will be added to the nine existing modules in September. Source: Prof. Everett T. Keach, Jr., 206 Dudley Hall, University of Georgia at Athens, Athens, Georgia 30602.

For further information about environmental education programs at University of Georgia at Athens contact: Dr. Robert Saveland, Department of Social Studies Education, University of Georgia, Athens, Georgia 30602.

Environmental Biology at Georgia Southern College is offered as an area of emphasis within the degree, Bachelor of Science with a major in Biology.

This undergraduate program of study is designed to provide a working base in biology, physical sciences and mathematics, and essentially a minor in engineering technology.

Students in the environmental biology program are preparing for employment as technicians in governmental (civic, state or federal) agencies, business, or industry involved with research, development, or regulatory work in environmental problems. For further information contact: Dr. Edwin T. Hibbs, Head, Department of Biology, Georgia Southern College, Statesboro, Georgia 30458 or John R. Bozeman, Coordinator, Environmental Studies, Department of Biology, Georgia Southern College, Statesboro, Georgia 30458.

Biology 165 - Man and His Environment - A core curriculum course designed to help the student understand some of the problems developing from man's interaction with his environment. Consideration is given to man's place in nature with special emphasis given to population, air, water, and noise pollution. The earth's life support system is stressed.

General Technology 165 - Man Technology and Environment is being offered for the fifth consecutive year in the core curriculum area. This course is designed to study technology as one of man's instruments for improving, maintaining, or devastating the environment with special emphasis on the need for intelligently evaluating and utilizing technology.

Teacher Education - the Teachers, Environment and Technology Institute, a joint industry-education effort, has been offered for graduate and undergraduate credit for four consecutive summers, reaching ninety-two teachers. The rationale for the institute is based upon the conviction by both the educational and industrial sponsors that there is both an interest and need for teachers to expand their knowledge, understanding and teaching techniques about the interactions of man, environment and technology. The content of the Institute is complimented by: (1) the input of an industrial advisory consultant; (2) the commitment of industrial personnel involved in the environmental and technological aspects of industry; (3) involvement of field consultants from government and educational areas such as the sciences, humanities and education; and, (4) by the experiential involvement of the institute participants with field specialists in environmental, technological and educational areas. Contact: Rex A. Nelson, Professor, Box 8044, Georgia Southern College, Statesboro, Georgia 30458.

State Resource Agency Activities

None to report.

Other Environmental Activities

The Garden Club of Georgia annually sponsors a workshop in the use of People and Their Environment (PATE) materials for Georgia teachers at Girl Scout Camp Timber Ridge near Atlanta. Contact: Mrs. James T. Anderson, Jr., Burnt Hickory Road, Marietta, Georgia 30060.

The Savannah Science Museum has a variety of environmental educational activities. Contact: Charles and Jean Milmine, Savannah Science Museum, 4405 Paulsen, Savannah, Georgia 31405.

The Georgia Conservancy publishes "Let's See" which is sent to over 70,000 school children in the state. It conducts week-end field trips and has an education committee. The annual meeting included a session on environmental education. Contact: Mr. Cecil Phillips, Executive Director, The Georgia Conservancy Inc., 3376 Peachtree Road, N.E., Suite 414, Atlanta, Georgia 30326.

Callaway Gardens hosts school groups and provides off-site programs in environmental education. Contact: Dr. Robert Pedigo, Director, Education Department, Ida Cason Callaway Foundation, Pine Mountain, Georgia 31822.

The Atlanta Regional Office of the National Park Service along with park and monument sites in Georgia works with school children through the S.T.E.P. program, living history program, etc. Contact: Mr. Ray Geerdes or Pat Stanek, National Park Service, Southeastern Region, 3401 Whipple Avenue, Atlanta, Georgia 30344.

- Dallas W. Stewart
Environmental Education
Georgia Department of Education
Atlanta, Georgia 30334
(404) 656-2576

August 1975

GUAM

In July 1974, a proposal for developing a program in environmental education for Guam secondary schools was approved by the ESEA Title III Advisory Council, and in June of this year the council approved the first continuation proposal, 1975-76.

The Life On Guam (LOG) project aims to supply a long needed program in ecology at the junior and senior high levels. Ten separate areas have been decided upon for coverage in high school units, and several writer/naturalists are doing the covering:

Beach Strand - Ms. Margie Cushing Falanruw, environmental specialist, Trust Territory; probably Guam's best qualified naturalist.

Coral Reef - Dr. Lu Eldredge, Marine Laboratory (former director), University of Guam; Mr. Richard Randall, instructor, Marine Lab, University of Guam, the world's expert on Western Pacific corals; and Mr. Hal Strom, biology instructor, George Washington High School.

Farm and Garden - Mr. Phil Moore, George Washington High School, former science chairman; Guam's leading botanist.

Freshwater - Dr. Lynn Raulerson, chairman, Division of Biosciences, University of Guam; freshwater specialist.

Geology - Ms. Gail Elkins, earth science instructor, John F. Kennedy High School.

Human Impact - Ms. Margie Falanruw.

Limestone Forest - Mr. Larry Behrens, biology instructor, John F. Kennedy High School.

Mangrove Swamp - Mr. Gaylord Diaz, student, University of Guam.

Savannah-Old Field-Roadside - Ms. Margie Falanruw.

Schoolyards - Ms. Maggie Flores, biology instructor, John F. Kennedy High School, Teacher of the Year, 1973-74; and Mr. Jeff Shafer, biology instructor, George Washington High School.

As in the environmental science program recently developed for elementary schools, field trips and outdoor education are to be emphasized.

Probably not all of Guam's high schools will be able to visit every one of the areas to be covered in the new program, but a given school should be able to sample enough of them for a good picture of the Island's ecology.

The writing is under way. Each unit is planned to run approximately 2-4 weeks, either at one clip, or sprinkled appropriately over a year. Units will be completed and printed for implementation in 1975-76.

Local public television station KGTF is producing a series of programs featuring project writers and field activities.

The Learning Resources Center, through the cooperation of director Dick Sorby is again providing considerable support, just now in the form of excellent drawings of selected Guam plants and animals by Lita Payne.

In January 1975 the University Biosciences Division offered an 800-level course on Ecology of Guam. The high school teachers who took this course will have first crack at using the new LOG materials this year as pilot teachers.

Depending on feedback from pilot teachers, project material will be either revised for a second pilot year or offered for Island-wide adoption in 1976-77. In either case it will then become available for any teachers who wish to use any part(s) of it in their day-to-day programs.

The project enjoys mutual rapport and support with several local agencies e.g., Guam Energy Office, Learning Resources Center, University of Guam--Division of Biosciences, Marine Lab, and College of Education and Extension Services - Department of Agriculture, Environmental Protection Agency, and some off-island organizations, e.g., Trust Territory Department of Education, University of Hawaii Lab School, and SCIS and OBIS at Lawrence Hall of Science, Berkeley.

- Dave Hotaling
Project Director
Consultants' Office
6th Floor Pedro's Plaza
Agana, Guam 96910
472-8553/8552

July 1975

HAWAII

Background of Hawaii's State Plan for Environmental Education

Hawaii's State Plan for Environmental Education is contained in Hawaii Revised Statutes 247, enacted in 1974. Act 247 is based on a comprehensive report of a Governor's Temporary Commission on Statewide Environmental Planning, whose members were from all of the different state departments, and whose work covered a span of more than a year.

Act 247 states very briefly the responsibilities of the various state agencies, e.g., Department of Land and Natural Resources, Department of Planning and Economic Development, Department of Transportation, etc. The Commission's report, titled *A Plan for Hawaii's Environment*, is comprehensive; it details and outlines what each of the state's departments must do cooperatively in order for Hawaii to maintain a quality environment.

Act 248 was enacted along with Act 247. It mandates an annual report to the Governor on progress made by each department in the state government.

Environmental Education

Environmental studies have been provided in Hawaii's public schools, but not under a statewide coordinated plan. Of the seven districts which comprise the state's school system, a few have provided much more leadership than others, possibly because of differences in priority of educational concerns and possibly because of background differences in district office personnel.

Each district and each school, therefore, has been given the option of concentrating on those areas of greatest concern to students and parents, e.g., school security, reading, metrics, etc. It is important to note that despite non-mandation, environmental education in the form of marine education, land-use studies, pollution and others are being implemented in classrooms and schools through teacher and school initiative.

Teacher Certification

There is, at present, no certification for environmental education, *per se*, although graduate courses are offered in this field both by the College of Education staff and by the University of Hawaii staff. Most of the environmental education teachers are from the areas of social studies and science.

Coordinator

The state Director for Environmental Quality Control is Dr. Richard Marland, c/o Governor's Office, State Capitol, with offices at 550 Halekauwila Street, Honolulu, Hawaii 96813.

The Administrator for Environmental Education is at present Dr. Patsy Saiki, Administrator, Sciences and Humanities, Office of Instructional Services, Department of Education. Her program specialists in charge of state programs in social studies, science, health and physical education, form a team in environmental education to plan or evaluate projects.

Environmental Education Advisory Board

An Environmental Education Advisory Board has not yet met formally although members of different departments have been contacted. An Environmental Education Committee, however, has been formulated and has met several times during the year to plan for the Guide to Environmental Education in Hawaii's Public Schools. The document has not yet been printed.

Environmental Education Publications

A Plan for Hawaii's Environment, A Report of the Temporary Commission on Statewide Environmental Planning, November 1973 (free while copies are available.)

Department of Education. A Plan for Hawaii's Environment. Hawaii District Office: 1973.

Department of Education. Hawaii's Geology. Hilo, Hawaii: Office of Library Services, September 1971.

Moanalua Gardens Foundation. Moanalua Valley. Honolulu, Hawaii: Mid-Pacific Press, Inc., 1971.

Research and Development Group. Parts of Plants. Honolulu, Hawaii: Hawaiian Academy of Science, August 15, 1974.

Kunimoto, Leonora and Tanaka, Shuichi. A Field Trip Instructional Guide to Big Island's Geology, A Segment of Outdoor Education K-9. Hawaii: 1971.

American Lung Association Guides (5 units). Health Efforts (Smoking), Health Effects of Air Pollution, Health Effects of Air Pollution Curriculum Supplement, Air Pollution in Hawaii, Health Educational Materials Catalogue.

Windward Regional Council, Local Town Plans. Kaneohe, Hawaii: 1975.

The Environmental Center, University of Hawaii. A Cross-listed Directory of Resources. Honolulu, Hawaii: University of Hawaii: 1974.

Foster Gardens. Friends of Foster Garden. Honolulu, Hawaii: 1975.

Lam, Chapman L. Hawaii's First Underwater Park - Achieved Without Joy. Honolulu, Hawaii: November 21, 1973.

Department of Planning and Economic Development. State of Hawaii Energy Policies Plan. Honolulu, Hawaii: 1974.

Department of Education. Agricultural Arts Course Guide. (Grade 9-12) Honolulu: 1974.

Department of Education. Moanalua. Honolulu, Hawaii: 1974.

Tanaka, Shuichi. An Instructional Guide to Tide Pool Biota. Honolulu, Hawaii: 1970.

Department of Education. Educational Field Trips in Hawaii. Honolulu, Hawaii: Office of Library Services: 1971.

Pacific Urban Studies and Planning Program, University of Hawaii. Toward a Population Policy for Hawaii. Honolulu, Hawaii: Fall, 1970.

Department of Land and Natural Resources and Department of Planning and Economic Development. Na Ala Hele (Trails for Walking). State of Hawaii: March 1973, 1975.

Department of Planning and Economic Development. Selected Bibliography on the Environment of Hawaii, Hawaii: Economic Research Reports. Honolulu, Hawaii: 1973.

Department of Education. Secondary Social Studies Program Guide. Office of Library Services: 1971.

Department of Education. Inter-Island Travel Units. Office of Library Services: 1972.

U.S. Department of Agriculture Soil Conservation Service. Hawaii Conservation Needs Inventory. March, 1972.

U.S. Army Engineer District of Honolulu. Kaneohe Bay Urban Water Resources Study. January, 1975.

Exemplary Public School Activities in Environmental Education

Hawaii has received a $42,000 grant from the U. S. Office of Environmental Education for the development of two environmental education units, one on Shoreline Management and the other on Ocean Law and Politics.

The State Legislature provided for $250,000 to begin an environmental education program in 1975, which was approved by the Governor. However, because it was an expansion fund, it is being held back until Hawaii's fiscal picture for 1975-76 becomes clearer.

Various projects are being carried out by university and private organizations but under more specific titles such as Population Education, Wilderness Education, Survival Education, etc. Thousands of students engage in environmental education activities, with three well-organized sites used being Kualoa Regional Park (John Eveland, Director), Moanalua Gardens (Anna Derby Bond, Executive Director) and Camp Erdman (Bill Suzuki, Director). There are at least a dozen other well used sites. Other sites are Kahana Valley Living State Park, which focuses on old Hawaii's way of living; Waimea Falls Park, which is rich in Hawaiian history and botany; Diamond Head Tidepool Biota Study Center, Foster Gardens, and Lyon Aboretum.

Among people who have shown consistent interest in environmental education are:

1. Mrs. Anna Bond
   Moanalua Gardens Foundation
   1352 Pineapple Place
   Honolulu, Hawaii 96819

2. Mrs. Virginia Brooks
   Department of Planning and Economic Development
   250 S. King Street
   Honolulu, Hawaii 96813

3. Mr. John Eveland
   Director, Kualoa Regional Park
   45-660 Keaahala Road
   Kaneohe, Hawaii 96744

4. Sister Edna de Manche
   Curriculum Research and Development Group
   1776 University Avenue
   Honolulu, Hawaii 96822

5. Mr. Loren Gill
   Sierra Club Foundation
   Bishop Museum Grounds
   Honlulu, Hawaii 96817

6. Mr. Bob Keane
   Leilehua High School
   1515 California Avenue
   Wahiowa, Hawaii 96786

7. Dr. Richard Marland
   Office of Environmental Quality Control
   550 Halekauwila Street
   Honolulu, Hawaii 96813

8. Mr. Richard Mortemore
Year 2000 Environmental Education Center
Hilo, Hawaii 96720

9. Mr. Ken Nagata
Lyon Arboretum
University of Hawaii
2444 Dole Street
Honolulu, Hawaii 96822

10. Mrs. Iris Pestonji
St. Francis Academy
2707 Pamoa Road
Honolulu, Hawaii 96822

11. Dr. Frank Pottenger
Curriculum Research and Development Group
1776 University Avenue
Honolulu, Hawaii 96822

12. Mr. Bill Suzuki
Camp Erdman
Mokuleia, Hawaii 96791

13. Mr. Roy Takayama
Ms. Florence Asato
Honolulu District Office
1137 S. Beretania Street
Honolulu, Hawaii 96814

14. Mr. Shuichi Tanaka
Hawaii District Office
P.O. Box 1922
Hilo, Hawaii 96720

15. Dr. Herbert Weaver
Department of Psychology
University of Hawaii
2444 Dole Street
Honolulu, Hawaii 96822

16. Mrs. Trudy Zelko
927 Prospect Street, #403
Honolulu, Hawaii 96822

In summary, Hawaii has spent several years in planning. The implementation stage is now in the hands of the seven districts and 225 schools.

- Dr. Patsy Saiki, Administrator
Sciences and Humanities
Office of Instructional Services
Department of Education
1270 Queen Emma Street
Honolulu, Hawaii 96813
(808)548-6341

October 1975

IDAHO

State Laws or Policies Related to Environmental Education

None at present.

Educational Agency-Activities and Responsibilities

Through a contract with the Office of Energy a full-time Environmental Education consultant is working to coordinate and develop a K-12 grade program of environmental awareness - energy conservation.

Resource Agencies-Activities and Responsibilities

Resource management agencies provide representation on the Environmental Education Advisory Council, supply curriculum materials and trained personnel to work with schools and conduct in-service workshops.

State Level Advisory Council

An Advisory Council on Environmental Education composed of representatives from the State Department of Education, State Department of Public Lands, Bureau of Land Management, United States Soil Conservation Service, Idaho Fish and Game, United State Forest Service, Idaho Parks and Recreation Department, Department of Health and Welfare, National Parks Service, institutions of higher education and classroom teachers has been established. Membership is subject to State Board of Education approval.

Special State Funding Program

None at present. Efforts are still underway to establish the Environmental Education Program under state funding.

Testing and Evaluation

None at state level at present. Plans are underway to develop such a program as an integral part of the state plan.

Resident Outdoor Programs

At present there are two such programs operating in Idaho: the Blaine County Resident Outdoor Environmental School in Ketchum; and Trail Creek Camp at Coeur D'Alene.

Outstanding Local Programs

Many local teachers are involved in some type of environmental education program but the efforts throughout the state are fragmented and communication concerning these projects is inadequate to make an evaluation of the quality or effectiveness of these projects. A survey instrument is now being developed to determine what is presently being done in environmental education throughout the state and to identify projects that may be considered outstanding representatives of the scope of environmental education in Idaho.

Additional Information

Many agencies and organizations are involved in environmental education workshops throughout the state. Some of the more successful efforts have been:

"Investigating Your Environment" - U.S. Forest Service, Department of Agriculture

"Energy and Man's Environment" - An interdisciplinary K-12 program sponsored by a grant from the Northwest Electric Utilities to Washington State Office of Energy Program.

"Project Learning Tree" - A program sponsored by a grant to the Western Regional Environmental Education Council from the American Forest Institute.

- Ms. Karen Underwood, Consultant
Energy and Environmental Education
State of Idaho
Department of Education
Len B. Jordan Office Building
Boise, Idaho 83720
(208) 384-2189

October 1975

ILLINOIS

Historical Development

In 1957, the General Assembly of the State of Illinois created a Division of Conservation Education in the Office of the Superintendent of Public Instruction and established an Advisory Board. This Board, composed of the Superintendent of Public Instruction, the Director of the Department of Conservation, the Director of the Department of Agriculture, a representative of the Illinois Association of Soil and Water Conservation Districts, and a representative of the universities, was authorized to make recommendations concerning the conservation education program. This legislation prompted many schools to include the study of natural resources in their curricula.

Not until 1967, however, did the teaching of conservation education in all public schools become law. This legislation mandated that in every public school there shall be instruction, study, and discussion of current problems and needs in the conservation of natural resources, including but not limited to air pollution, water pollution, the effects of excessive use of pesticides, preservation of wilderness areas, forest management, protection of wildlife and humane care of domestic animals. Legislation enacted in 1968 strongly suggested the inclusion of outdoor education experiences in the school program.

In January 1971, a number of educators concerned with environmental problems gathered at Loredo Taft Field Campus in Oregon, Illinois, to discuss a mutual interest - the need for an environmentally aware citizenry. They realized that in order to accomplish their goal it was necessary to implement a strong, effective educational program. With this in mind, a concerted effort resulted in the development of a formal proposal which was subsequently submitted to Governor Richard Ogilvie. In January of 1972, the Office of the Superintendent of Public Instruction was made aware of the lack of attention to this proposal; and, therefore, agreed to accept responsibility for its completion and implementation. Four regional hearings were conducted to offer citizens the opportunity to become involved in planning for an environmental education program. Subsequent to these hearings, the Superintendent of Public Instruction authorized an operating budget for the development of a Master Plan for Environmental Education and appointed a Task Force charged with this responsibility.

Throughout the summer and into December 1972, several meetings were held to produce a refined working document. The members of the Task Force for Environmental Education identified six critical needs in environmental education: the formation of an organizational and communications network to facilitate program implementation; curriculum development; teacher preparation; development of the school site into a learning laboratory; establishment of an effective adult education program; and evaluation of the program's progress.

Present Status in Illinois

The Office of the Superintendent of Public Instruction has recently undergone structural change as a result of the Illinois Constitutional Convention of 1970. The new constitution for the State of Illinois included the formation of the Illinois State Board of Education and provided for the appointment of a State Superintendent of Education by that Board. The agency has also been renamed the Illinois Office of Education.

The Illinois Office of Education administers a formal program in environmental education. Currently, Dr. Lance Bedwell is the only staff member with direct responsibilities for the program area. His emphasis is the provision of materials and services to schools dealing with environmental education curricula. He conducts workshops for teachers dealing with a variety of aspects of environmental education. He also meets with individual teachers and curriculum committees to assist in the initiation or improvement of environmental education curricula offerings.

The following list describes some of Dr. Bedwell's activities.

1. Continuing development of a Environmental Education State Plan for Illinois.

   This plan, which spans K-12, is based on recommendations submitted by the Task Force. When adopted, the plan will offer specific suggestions for long-range planning and implementation. The need for such action is evident. Many schools in the state do not have environmental education programs. Of those which have programs, many limit their efforts to the sciences and neglect the interdisciplinary nature of environmental education.

   The proposed State Plan for Environmental Education has been submitted to the new State Superintendent of Education, Dr. Joseph M. Cronin. It is expected that he and the State Board of Education will take official action on it during autumn 1975.

2. Preparing an Environmental Education Handbook for Teachers.

   The completed Handbook should be available in autumn 1975 and included in the mailing of the second Environmental Curiosity Sampler (a resource booklet published by the Illinois Institute for Environmental Quality). All designated environmental education coordinators as well as Superintendents of Educational Service Regions, Unit and District Superintendents, and Principals will receive copies. A sufficient supply for responding to teacher requests will also be maintained.

3. Presenting environmental education workshops throughout the State.

   In addition to the customary teacher workshops, plans are being finalized concerning special regional workshops for environmental education coordinators.

4. Visiting schools for the purpose of assisting in the development of quality environmental education programs.

   The Upper Mississippi River ECO Center Environmental Education Cooperative is an example of the many quality programs in Illinois. The development of this program to its current level of nationally recognized excellence is the result of the efforts of many people over the past four years. Six years ago, a small group of Carroll County educators formed an outdoor education committee which planned and carried out an inservice training program at Timberlake. Those committee members had innovative ideas and the ECO center program was subsequently developed under a three-year grant from Title III, ESEA.

   The present program is locally funded and administered by the Carroll County Educational Service Region, Howard Kennedy, Superintendent; Mr. Dennis Etnyre, Assistant Superintendent for Environmental Education, Upper Mississippi River ECO-Center program.

   The major objective of the ECO-Center program is the maintenance of an environmental resource facility for the implementation and coordination of a comprehensive environmental education program K-12 for the students and other citizens of Northwestern Illinois. The program provides each teacher with materials, resources, and inservice training for in-the-class activities and technical assistance in utilizing areas outside the classroom. A coordinated study program outside the classroom is also provided with learning objectives identified.

   The ECO-Center has received a Title III grant (1975-76) to pilot a diffusion model to districts outside the original project area. The purpose of the grant is to aid Illinois school districts in developing similar programs.

5. Providing materials and/or human resources to schools upon request.

   Many publications relevant to environmental education are distributed on request. A file of professional consultants is also maintained in order to provide human resources to schools which request such services.

6. Responding to the recommendations of the Conservation Education Advisory Board.

   The Board, mandated by the Conservation Education Act of 1957, conducts quarterly meetings to provide recommendations to the Illinois Office of Education concerning environmental education.

7. Coordinating publicity for the Summer Environmental Education Workshops for Secondary Students.

   The workshops are sponsored and conducted by five institutions of higher education in the State (Northern Illinois University, Southern Illinois University, Western Illinois University, Illinois State University, and Lake Land College) and consist of one week of intensive instruction in environmental education. Directors at each institution devise their own programs and offer varying numbers of workshops depending on local constraints.

8. Coordinating the selection of Environmental Teacher of the Year.

   Each year, the Illinois Office of Education, in cooperation with the Illinois Association of Soil and Water Conservation Districts, selects two outstanding teachers to be designated Teacher of the Year. Entries are accepted in two categories, K-5 and 6-12, due to the difficulty in establishing one set of criteria for both elementary and secondary teachers.

9. Participating in local, state, and national meetings relevant to environmental education.

   For example, meetings of the Environmental Association of Illinois. (Box 299, Lorado Taft Field Campus, Northern Illinois University, Oregon, Illinois 61061.)

10. Cooperating with a variety of organizations and agencies involved in environmental education in Illinois.

   Many other agencies, organizations, and associations have legislative and historical responsibilities for environmental education. Agencies such as the Illinois Institute for Environmental Quality, Department of Conservation, and Soil and Water Conservation Districts are particularly involved in environmental education. The Environmental Protection Act creating the Institute for Environmental Quality specifically mandates that institute a major role in funding, curricular development, and teacher preparation for environmental education. The Illinois Department of Conservation has resources and personnel that have long been available to schools for conservation and environmental programs. Also, the Soil and Water Conservation Districts have long been interested in environmental education. The input of their local councils is deemed particularly important. In addition, the private sector has important roles and responsibilities. The continuing efforts of organizations and foundations such as Illinois Wildlife Federation, Izaac Walton League, Open Lands Project, Women's Clubs, and others are needed. The state education agency, however, shall continue to serve as the initiating, coordinating, and evaluating agency.

Future of Environmental Education in Illinois

The adoption of a State Plan for Environmental Education should lead to many improvements in the status of environmental education in Illinois.

The proposed plan provides for a balanced communications network to implement a program of the size and scope necessary for Illinois. The Conservation Education Advisory Board and the Environmental Education Unit within the Illinois Office of Education may be expanded to better meet contemporary needs. The proposed plan also points out the need for environmental education coordinators in each district, environmental education agents in the regions established by the Illinois Office of Education, and county and district environmental education committees to provide leadership through local areas. Implementation of a well-planned communications network will lead to more effective local efforts due to the influx of assistance from a variety of agencies, organizations, and institutions.

Broad curricular guidelines for implementation of environmental education programs on a K-12 basis are also recommended in the proposed State Plan. The guidelines are both sequential and multidisciplinary and are based primarily on the following broad themes as suggested by the Task Force:

Theme 1. INTERDEPENDENCE

Understanding the interdependence of living and non-living things is fundamental to understanding and appreciating ideas related to other themes. One cannot appreciate the significance of human impact on the environment, the need for maintenance of our world, ideas related to the quality of life or issues related to its improvement without first comprehending the interconnectedness of our world.

Theme 2. IMPACT

Because of our numbers and our technology, people have become capable of modifying the environment, not only to the extent of changing the character of the landscape, but by altering some of the natural cycles which are essential to continuation and renewal of life. Growing from the concept of interdependence, an understanding of the significance of possible dangers of human impact on natural cycles constitutes a second broad area necessary in the development of environmentally-literate citizens.

Theme 3. MAINTENANCE

Natural environments tend to be self-renewing because of the continued input of solar energy and other natural cycles. Things that are built by people, on the other hand, tend to degrade with the passage of time unless energy is expended to maintain them. Our houses, cars, clothing, and other possessions need to be repaired, cleaned, and maintained or else they rapidly deteriorate and become unusable. Our cities, villages, and other constructed environments need continual care.

Theme 4. QUALITY OF LIFE

The quality of life of all living things is dependent on the quality of the environment. How we appraise the quality of life depends on our values, but most people will agree that the environment in which we live affects how we feel and act toward ourselves and others.

Theme 5. IMPROVEMENT

Improving the quality of life should be a central goal of our times. To achieve this goal, we must know what it means, value it and then organize our knowledge and resources to bring about improvement. To make our lives better will not be easy. Because of environmental decay, rapid growth and social ills, such as crime and violence, we must expend massive amounts of effort, brainpower and money just to stabilize society. To improve the quality of our lives, and not let it decline, remains one of the greatest challenges of our society. How successful we are depends on our knowledge, values, and ability to organize resources.

These themes and guidelines should serve as a valuable aid to planning and thus encourage development of environmental education programs in all Illinois schools.

Well-prepared teachers, administrators, and support personnel are also necessary if efforts in environmental education are to be successful. Furthermore, individuals working with children and adults outside the classroom must possess the understanding, experience and skills needed for effective implementation of environmental action. Therefore, the plan proposes a body of knowledge, skills, and experiences to be included in preservice and inservice training of administrators, teachers, and leaders of youth and adults. Acceptance of the proposed recommendations by those involved in the operation of preservice and inservice training programs will certainly lead to better prepared environmental educators.

Facilities must include various kinds of locations and equipment. These facilities should be used at the appropriate time in the formal and non-formal educational process of all citizens. The proposed plan sets forth guidelines for the design and use of facilities, placing much emphasis on managing the school in an ecologically-sound manner and in using the entire school site to best advantage. With the adoption of the plan, one or more Environmental Education Demonstration Centers may be designated for the State of Illinois. The purpose of the Centers should be to actively conduct research, and develop and disseminate activities.

These centers may operate in a manner similar to the Agriculture Experiment Stations. The Regional Environmental Education Agents and District Environmental Education Coordinators would have direct working relationships with the Demonstration Centers. A center might be a part of a school district, Educational Service Region, college or university. The Center staff may or may not be a part of the Illinois Office of Education and be paid by the state. Sources of funds may be federal, state, or private.

Presently, adults are being asked to make important decisions and to take action on environmental issues with insufficient information and without verified knowledge. The plan contains recommendations concerning programs of continuing education which will allow the study of attitudes, knowledge, values, and skills which are required if adults are to responsibly contribute to environmental decisions. The long-range goal is an environmentally aware and concerned citizenry.

Provisions will be made for the continuous evaluation of the effectiveness of the state plan. Analysis and evaluation of environmental awareness, attitudes, materials, facilities, and legislation will also be conducted.

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October 1975

INDIANA

State Plan for Environmental Education

Governor Otis Bowen has appointed a seventeen-member environmental education council to design an implementable plan for Environmental Education. The plan will consist of a part for formal (K-12), non-formal (Adult, Community), and higher education. The council anticipates funding of $135,000 to begin Phase I of the implementation process. If Phase I is successful, the second year funding could be as much as $400,000. An executive director will be appointed to implement the plan if it is funded.

Environmental Education Legislation

Legislation was introduced and passed in 1958 requiring a natural resource course for certification in these major fields: biology, vocational agriculture, and home economics.

Teacher Certification

A minor in Environmental-Conservation Education will be introduced in 1976. A minor in Recreation will also be available.

State Environmental Education Consultants

Jack Snell
Environmental Education Consultant
Indiana Department of Public Instruction
Northern Regional Service Center
635 South Main Street
South Bend, Indiana 46623
(219) 289-7904

Joe Wright
Environmental Education Consultant
Indiana Department of Public Instruction
Division of Curriculum
120 West Market Street - 10th Floor
Indianapolis, Indiana 46204
(317) 633-4507

Responsibilities of each include:

1. Designing and implementing a State Environmental Education Plan.

2. Designing and implementing environmental education guidelines, Total Environmental Education.

3. Designing and implementing in-service training programs to diffuse national environmental education programs such as E.C.O.S. (Yorktown Heights, New York), I-C-E (Green Bay, Wisconsin), etc.

4. Designing and implementing student action programs to encourage students and educators to improve environmental-ecology conditions in their school community. Project S.A.V.E. (Student Action for Valuing the Environment).

Environmental Education Advisory Board

An Environmental Education Council has been appointed by Governor Bowen.

Environmental Education Publications

Total Environment Education. A K-12 interdisciplinary environmental education guide for Indiana schools. It is available at no cost to Indiana educators. Out of state requests are sent to ERIC.

Project S.A.V.E. This publication will describe innovative student action projects. It will be available in Spring 1976.

Exemplary Programs

a. Title III - New Albany-Floyd County Consolidated Schools. This school district introduced the State Environmental Education Guidelines by providing each participating educator a two-day in-service training program. Two interdisciplinary environmental education publications were written by staff from this school system: Total Environment Education - Grades 1-6; Total Environment Education - Grades 7-12.

b. A.R.M. (Action Research Model). The Evansville Chamber of Commerce has received a grant to design a program to discourage littering and other solid waste problems. A council has been organized to implement the A.R.M. Program. Schools, industry, higher education, community groups, churches and scouts are participating in this plan. Elementary and secondary educators are writing a solid waste curriculum for the Evansville Community Schools. More information is available from: Mr. George Bergeron, Project A.R.M., Evansville Chamber of Commerce, Southern Securities Building, Evansville, Indiana 47707.

c. Marion Community Schools located an abandoned church camp and went to their community for help and located $20,000 to purchase Asher Woods, a lovely 160 acre classroom. The school board was so impressed with this support that they employed an environmental education coordinator to develop the site. More information is available from: Mr. Ray Lockwood, Associate Superintendent, Marion Community Schools, 121 East River Boulevard, Marion, Indiana 46952.

d. Social Studies, Community and Survival is a summer program for junior high students. Students plan the program including transportation, budget, curriculum, equipment, etc. The final objective is to climb Longs Peak in Colorado. More information is available from: Glenn Linnert, New Albany-Floyd County Schools, 802 East Market Street, New Albany, Indiana 47150.

e. Canoeing a Wilderness is a summer environmental education program sponsored by Homestead Junior-Senior High School, Fort Wayne, Indiana. Students help plan the entire program including budget, curriculum, transportation, menu, equipment, etc. The participating students and staff spend two weeks in a water wilderness area in Canada. More information is available from: Mr. Douglas Waldman, Outdoor Education, Homestead Junior-Senior High School, 4310 Homestead Road, Fort Wayne, Indiana 46804.

f. Project S.A.V.E. (Student Action for Valuing the Environment). This program encourages students and teachers to design environmental projects for school communities. Each student class or school entering a project(s) receives a citation or certificate. More information is available from: Project S.A.V.E., Division of Curriculum, 120 West Market Street - 10th Floor, Indianapolis, Indiana 46204.

College and Universities

a. Marian College was provided funding through P.L. 91-516 to design an outdoor Ecological Laboratory. Three publications have been written:

1. Environmental Investigations Grades 1-6
2. Environmental Investigations Grades 7-12
3. Environmental Investigations Special Education

More information is available from: Dr. Dennis Clark, Marian College, 3200 Cold Springs Road, Indianapolis, Indiana 46206. (317) 924-3291

b. Ball State University provides a minor, major and Masters Degree in Natural Resources. This program is multi-disciplinary in nature and stresses student involvement in managing resources. More information is available from: Dr. Clyde Hibbs, Director, School of Natural Resources, Ball State University, Muncie, Indiana 47306. (317) 285-7161

c. Manchester College provides for a second major in Environmental Studies. Graduate students are placed in education, private industry, or governmental positions. The program is multi-disciplinary. More information is available from: Dr. William Eberly, Director, Environmental Studies, Manchester College, North Manchester, Indiana 46962.

d. Indiana University

Indiana University School of Health, Physical Education, and Recreation offers a minor, major, Masters and Doctorate in the field of Environmental Outdoor Education. This multidisciplinary program prepares students to teach in the public schools or work for cities, industry, camps, etc. More information is available from: Dr. Thomas Rillo, Director, Outdoor Education, School of Health, Physical Education, and Recreation, Indiana University, Bloomington, Indiana 47401.

The Environmental Studies Program is a cooperative undertaking of the College of Arts and Science of Indiana University at Bloomington and the School of Public and Environmental Affairs (SPEA). SPEA was instituted early in 1972 and a number of existing programs were transferred to the new school. Among these was the Environmental Studies Program which had been in existence since 1971 as an interdisciplinary program in the College of Arts and Sciences.

At the undergraduate level, the Environmental Studies Program offers an Environmental Studies Certificate which is available to all undergraduate students in the University, the Environmental Studies major for all students in the College of Arts and Sciences, and the Environmental Policy and Environmental Health Management concentrations for students seeking a Bachelor of Science in Public Affairs degree and the Environment Concentration for students seeking an Associate of Science Degree from SPEA.

At the graduate level, the Environmental Studies Program offers the Environmental Policy concentration in the Master of Public Affairs degree, the Dissertation Minor in Environmental Studies, and the newly instituted Master of Science in Environmental Science degree.

The program consists to two types of courses - interdisciplinary courses taught by program faculty and courses in standard academic departments taught by the regular faculty of those departments. Nearly all of the departmental courses have been developed recently in response to student demand and the needs of the program. Non-University based professionals are brought in for seminars and class sessions. Their presentations are usually on topics of current interest or topics which compliment academic subjects.

The general purposes of the program include the development of a new kind of professional who combines a knowledge of environmental problems and possibilities for solutions with knowledge of policy formulation and administration. The Environmental Studies Program serves as the primary bridge between the science disciplines and the School of Public and Environmental Affairs, particularly for purposes of curriculum and degree program development and evaluation. More information is available from: Craig E. Nelson, Director, Environmental Studies Program, Poplars 438, Indiana University, Bloomington, Indiana 47401. (812) 337-9485

e. Indiana State University

The Science Teaching Center provides educators with environmental education programs and training needed to enable them to design and implement programs within their school and school district. Staff from this Center involves other disciplines on campus in their environmental education programs. As a result, several departments have infused environmental concepts into their curriculum. For more information, contact: Dr. Marshall Parks, Science Teaching Center, Indiana State University, Terre Haute, Indiana 47809. (812) 223-6311

State Resource Agency Activities

a. Indiana State Board of Health is printing a publication, The Whole Earth Design, which contains natural and human systems investigations. The United States Forest Service Program, "Process Approach to Environmental Education" has been adapted to Indiana. The publication will be introduced through in-service training programs. More information is available from: Bill Swanson, Environmental Education Consultant, Indiana State Board of Health, 1330 West Michigan Street, Indianapolis, Indiana 46206.

b. The Governor's Pride Program. This state environmental education program consists of a formal and non-formal plan. An environmental education council has been appointed to design and implement the plan. An executive director, an environmental education technician and an environmental education secretary will be employed to manage the implementation of the plan. It is being implemented now through a series of on-going programs. For more information, contact: Jack Snell, Chairman, Environmental Education Council, Northern Regional Service Center, 635 South Main Street, South Bend, Indiana 46623.

c. Environmental Quality Control, Inc. This non-profit environmental organization provides funding, resources, and curriculum materials for PRIDE, the State Environmental Education Plan. For more information contact: William Sorrells, Executive Director, Environmental Quality Control, Inc., 1220 Waterway Blvd., Indianapolis, Indiana 46202.

d. Merry Lea Environmental Center. This non-profit Environmental Education Center conducts seminars, workshops, and provides additional services including: facilities for workshops; newsletters; consulting services to school and communities. For more information contact: Dr. Austin Ferguson, Executive Director, Merry Lea Environmental Center, P.O. Box 263, Wolf Lake, Indiana 46796.

e. Soil and Water Conservation Districts. Through each of these 92 SWCD's, the Soil Conservation Service can provide on-site technical assistance in resource planning and treatment. This assistance provides alternatives to control water and soil erosion. They have publications, teaching materials and films for public use. For more information, contact your local Soil and Water Conservation District office. Their office is located in the county seat of your county. Ask for the District Conservationist.

Other Environmental Education Activities

a. Indiana Dunes National Lakeshore. This federal agency conducts in-service training programs to acquaint educators with the N.E.E.D. Program. Plans include involving school staff (Gary and Chicago region) in implementation of N.E.E.D. and other innovative Environmental Education Programs. For more information, contact: James Whitehouse, Superintendent, Indiana Dunes National Lakeshore, P.O. Box 12, Chesterton, Indiana 46304. (219) 926-1121

b. Muscatatuck National Wildlife Refugee is planning an environmental education program for schools surrounding their facilities. For more information, contact: Charles E. Scheffe, Manager, Muscatatuck National Wildlife Refugee, Seymour, Indiana 27274.

c. Conservation-Outdoor Education Association of Indiana. This organization conducted five regional environmental education workshops last school year. The annual meeting was held at Indiana Central College. A newsletter, C.R.E.E.D. (Curriculum Resources for Environmental Education Development) is published ten times each year. Approximately 300 teachers were provided in-service training and curriculum materials through C.O.E.A.I. last year. Mike Price is president-elect. Howard Michaud is editor of C.R.E.E.D.

d. Iron Eyes Cody visited Indiana for four days in October. He presented environmental education programs in eight Indiana communities and the response was tremendous. The eight communities he visited will help implement the State Environmental Education Plan.

e. Self Earth Ethic: A Life-Centered K-12 Curriculum Guide for Environmental Education. John W. Hart and Jessie M. Turner, Directors, 801 Elks Road, Richmond, Indiana 47374. The authors of the S.E.E. (Self-Earth Ethic) series have entered into an agreement with the Interstate Printers and Publishers, Inc., Danville, Illinois, for the copyright and publication of their materials. Eight titles in the series have been prepared; the third volume was published in September, 1974.

   1. Self-Earth Ethic (SEE). A Life-Centered K-12 Curriculum Guide for Environmental Education. Level One.

   2. Self-Earth Ethic (SEE). A Life-Centered K-12 Curriculum Guide for Environmental Education. Level Two.

- Joe Wright
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October 1975

IOWA

Advisory Council for Environmental Education

The First Session of the 66th General Assembly passed a resolution affecting environmental education in Iowa, calling for an environmental education advisory council. A ten-member council has been appointed.

The text of House Concurrent Resolution 34 is as follows:

> Whereas, the General Assembly has directed the school districts of this state to include instruction on the conservation of natural resources and environmental awareness in their respective educational programs for students in grades one through eight; and
>
> Whereas, it is desirable that the education program relating to the conservation of natural resources and environmental awareness be developed and coordinated among the various disciplines and educational levels that are concerned with environmental education in areas of land, water, air and resource management; and
>
> Whereas, it is desirable to develop programs for in-service teacher training in environmental education in cooperation with institutions of higher education or other public or private agencies or organization;
>
> Now Therefore,
>
> Be it Resolved by the House of Representatives, the Senate Concurring, That an environmental education advisory council be created within the department of public instruction consisting of the administrator of the department of soil conservation, the state conservation director, the executive director of the department of environmental quality, or their respective designees, and not more than seven additional members selected from the state at large who have demonstrated competence and interest in conservation education, who shall be appointed by the superintendent of public instruction. The superintendent of public instruction or his designee shall act as executive secretary to the advisory council which shall initially meet at the call of the executive secretary; and
>
> Be It Further Resolved, That it shall be the responsibility of the environmental education advisory council to advise and assist the department of public instruction in the planning and development of an environmental education program giving emphasis to coordinating the efforts of the various disciplines and education levels that are concerned

with environmental education in the areas of land, water, air and resource management, developing programs for inservice teacher training in environmental education in cooperation with institutions of higher education or other public or private agencies, and developing an environmental education program which will provide for the education of all segments of society; and

Be It Further Resolved, That the environmental education advisory council shall assume its duties of office effective July 1, 1975 or at such subsequent date as sufficient funds are appropriated or available to the department of public instruction for the purpose of planning and developing an environmental education program and to pay the actual and necessary expenses of the members of the advisory council who are not employees of the state. The advisory council members who are employees of the state shall be reimbursed for necessary expenses from funds appropriated to the state agencies by which they are employed; and

Be It Further Resolved, That the environmental education advisory council shall be dissolved upon completion of the planning and development of an environmental education program for the state or effective July 1, 1978, whichever date is earlier.

Environmental Education Consultant

Duane Toomsen, Consultant, Environmental Education, Curriculum Division, Department of Public Instruction, Grimes State Office Building, Des Moines, Iowa 50319; (515) 281-3264.

Project SCATE

The State Department of Public Instruction has received a grant of $42,079 from the Office of Environmental Education, USOE, to provide high school students an important role in exploring means of resolving major environmental problems in Iowa. The title under which this project will go is Project SCATE (Students Concerned About Tomorrow's Environment).

SCATE's primary purposes are to:

1. expose high school students in selected areas to major environmental issues that are affecting or will affect their lifestyles, and
2. allow them to participate in the democratic decision-making process whereby solutions are sought, scrutinized and effected.

Designed to culminate in presentations before state agency representatives in the legislative chambers during the first half of 1976, SCATE began during the Autumn of 1975 with the identification and researching of a local environmental problem common to participating schools. Next, regional meetings sponsored by the participating Area Education Agencies provide "town meeting" formats for group interactions whereby the alternatives can be debated and a consensus reached. Then representatives from each Area Education Agency will convene in Des Moines to debate and resolve alternatives to the issues.

Final resolutions will be presented to appropriate state agency representatives and legislative committees by the students themselves, during a mock general assembly in early 1976.

Dr. Ronald Harshman is coordinator of Project SCATE for the Department of Public Instruction.

The New Jersey-based, national validated Title III Project, Institute for Political and Legal Education (IPLE), has been selected and invited to Iowa to provide teacher-student in-service under sponsorship of DPI and the Iowa-Nebraska Title III Facilitator Project, for Project SCATE. Two goals have been identified:

1. To provide high school government teachers with a validated, proven course of study for active student participation in government, and

2. To stimulate, through in-service, teacher and student involvement in Project SCATE.

"Government and the environment" workshops to be conducted by IPLE personnel were scheduled for October 1975 in two locations. Each teacher attending was required to bring a student leader of his choice.

Environmental Education Teacher Incentive Award Winners

Among 1975 Teacher Incentive Award grants announced by Dr. Harold Hulleman, Title III Coordinator, were the following environmental education efforts:

1. Charles Spain, Des Moines Independent Community Schools, "CVS Environmental Laboratory, $1500.

2. Jan Kvach, Cedar Rapids Community Schools, "The Jackson Natural Environmental Study Area (The Jackson Web), $879.

3. Elizabeth Pollock, Donald Dunn, William Fry, Burlington Schools, "James Madison Innovations for Outdoor Learning," $1500.

4. John Butts, Marshalltown Community Schools, "Outdoor Education: It's in the Bag," $1500.
5. Kenneth Frazier, Ames Community Schools, "Common Wild Flowers of Central Iowa--A Filmstrip-Cassette Presentation," $1330.
6. Nancy Ericson, Marguerite Hartley, Mason City Community Schools, Environmental Careers and Organic Gardening for Urban Elementary Students, $1500.
7. Richard Sloan, Marion Community Schools, "Field Ecology: For the Under-Achiever," $1490.

Publication in Environmental Education

The State Department of Public Instruction during the school year published a bimonthly news letter concerning environmental education activities in Iowa. DPI Environmental Education News is edited by Duane Toomsen.

IECL Conference

Educators and administrators from Iowa and several surrounding states participated in a two-day Energy Conservation Leadership Project (IECL) conference in Des Moines on December 4 and 5. IECL was created to help the nation's state education agencies take the initiative in educating students and adults about the energy crisis.

A study of thirteen school districts showed potential nationwide energy savings in elementary schools alone of $270 million. One school cut its energy consumption by simply turning off unnecessary lights, insulating boilers and keeping equipment in good condition.

These figures were released by the Educational Facilities Laboratories of Menlo Park, California. They provide schools with self-audit lists and questionnaires designed to determine where energy is being wasted. A similar statewide program has been created by the Minnesota Energy Agency, which sends teams of specialists to schools requesting energy audits.

IECL-DPI Energy Awards Program

The State Department of Public Instruction has agreed to participate in an important national energy conservation awards program. The program, under the auspices of the Interstate Energy Conservation Leadership Project, is designed to identify school districts throughout the country that have made an outstanding effort in the area of energy conservation. The purpose of the program is to encourage energy conservation in the nation's school systems by demonstrating the potential savings achieved by successful energy management programs. The basic organization of the award program is as follows:

Upon receipt of a notification of intent to participate from a state education agency, IECL will supply the agency with certificates to be awarded to school districts. After the state awards have been made, IECL will use data provided by state agencies to give national recognition to a selected number of school districts.

Among the criteria used for making these awards are:

1. Verifiable savings in district utility bills as a result of an energy conservation program;
2. Outstanding energy conservation programs in the school;
3. Exceptionally worthwhile in-service training programs in the area of energy conservation.

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October 1975

Revised December 1975

KANSAS

Activities of the State Department of Education

Through its five divisions---Administration and Finance, Continuing Education, Vocational Education, Development, and Instruction---the State Department of Education touches all phases of the public education process in the state. A ten-member elected State Board of Education serves as the policy-making body for the department and appoints the State Commissioner of Education.

With respect to environmental education, the adopted policy reads as follows:

> "The State Board of Education encourages the continuation and enhancement of environmental education and hereby declares that it will have high priority in curriculum content and that the development and interdisciplinary teaching of environmental concepts appropriate to the age of the learner shall be included throughout the educational process as expressed through a state plan."

Coordinator for Environmental Education

Assigned coordination duties for environmental education for the State Department of Education is: Clayton Stultz, Specialist, Economic Education, Kansas State Department of Education, Kansas State Education Building, 120 East 10th Street, Topeka, Kansas 66612; (913) 296-3918.

Environmental Education Resources of the State Department of Education

Although the State Department of Education does not distribute educational materials directly to the schools, it maintains extensive information resources that are available to education personnel. The most extensive of these resources is in the ERIC files, which includes information on programs, curriculum developments, materials sources, books and pamphlets, etc.

In addition, the department provides consultative services, guidelines for projects, and program development assistance. The department can assist in-service programs and provide limited speaker services.

Environmental Education Legislation

House Concurrent Resolution 2020, Session of 1975, deals directly with environmental education:

Whereas, The problems we observe in the environment today have their origins deep in our past and present way of life; while technology has made life easier for us in many ways, it has also vastly altered the environment; not only is our quality of life reduced but life itself is jeopardized; and

Whereas, A new lifestyle is called for, based on the requirements of living within our environment and within the constraints of our available resources; this concept is just now beginning to make itself realized to the general public faced with rising costs and shortages of both energy and materials; and

Whereas, It is not only our neighbors' attitude and manner of living which needs alteration, it is ours; one way to begin a new way of thinking and living is through environmental education; and

Whereas, Environmental education is a life-long process; it is a new way of looking at life, fostering awareness of other life and interrelationships, learning to recognize the effects (both good and bad) man has on his physical and biological surroundings, and the responsibilities he must accept for the mere fact of his presence and his activities in the environment; it should enable him to make sound ecological decisions and foresee their consequences, to make value judgments, and act accordingly; and

Whereas, Environmental education encourages development of life values and a style of living which minimizes destruction and maximizes those relationships that enhance life; it is learning how to contribute to the quality of life, and fosters the constructive use, rather than exploitation, of environment; and

Whereas, Environmental education will give an ecological perspective for every aspect of learning and living and will provide alternate ways of thinking and ultimately of acting: Now therefore,

Be it resolved by the House of Representatives of the State of Kansas, the Senate concurring therein: That, in recognition of the urgent need for incorporation into the public school system of the concepts of environmental education, the state board of education is hereby directed to provide leadership in the field of environmental education so that state goals and objectives can be implemented in the school districts of Kansas at the earliest practicable time. In recognition of the fact that the state board of education has already shown concern for environmental education and has cooperated in the operation of certain environmental education pilot projects, the state board of education is further directed to officially recognize the Kansas advisory council on environmental education (KACEE) and to consult with that advisory council and its executive committee, and to prepare and submit to the 1976 Legislature a comprehensive statewide plan for environmental education and a proposed action program containing a detailed funding proposal designed as expeditiously as possible to make environmental education opportunities available to all students of Kansas school districts; encourage post-secondary institutions to incorporate into their teacher training programs effective environmental education preparation opportunities; prepare guidelines to assist school districts in planning and organizing environmental education programs; provide in-service and other programs as may be necessary to reorient teachers serving in the field; prepare, publish and otherwise disseminate materials for the continuing education of school personnel; evaluate the effectiveness of school district environmental education programs; and provide such further state level direction and leadership as will bring the full benefits of environmental education to the youth of this state.

Be it further resolved:. That the state board of regents is hereby directed to emphasize environmental education in teacher preparation programs in the institutions under their management.

Be it further resolved: That the secretary of state is hereby directed to transmit a copy of this resolution to the chairman of the state board of regents, the chairman of the state board of education, and to the commissioner of education for duplication and transmittal to every school board member within the state of Kansas.

Kansas Advisory Council on Environmental Education

The Kansas Advisory Council for Environmental Education was organized in 1969 to enhance awareness, knowledge, and concern about the environment among the citizens of Kansas. The Advisory Council is made up of more than fifty public and private organizations, institutions, and business organizations, as listed below:

Colleges and Universitites

- Baker College
- Bethel College
    - Southcentral Kansas Environmental Education Center
    - Education Department
- Emporia, Kansas, State College
- Fort Hays, Kansas, State College
- Kansas State University
    - Agricultural Experiment Station
    - College of Education
    - Environmental Education Curriculum Materials Center
- Pittsburg, Kansas, State College

University of Kansas
    Division of Biological Sciences
    Museums of Natural History
    School of Education
Wichita State University

Organizations

American Association of University Women, Kansas Division
Audubon Society
Kansas Academy of Science
Kansas Associated Garden Clubs
Kansas Association of Biology Teachers
Kansas Association of Conservation Districts
Kansas Association of Secondary School Principals
Kansas Association of School Boards
Kansas Association of Teachers of Science
Kansas Council for Geographic Education
Kansas Federation of Women's Clubs
Kansas Grassroots Association, Inc.
Kansas Lung Association
Kansas National Education Association
Kansas Sierra Club
Kansas Wildlife Federation, Inc.
Kaw Valley Girl Scout Council, Inc.
League of Women Voters of Kansas
Save the Tallgrass Prairie, Inc.
Soil Conservation Society of America, Kansas Chapters

State Agencies

Advisory Council on Ecology
Cooperative Extension Service, KSU
Kansas Forestry, Fish & Game Commission
Kansas Geological Survey
Kansas State Park & Resources Authority
Kansas Water Resources Board
State Biological Survey
State Conservation Commission
State Department of Agriculture
    Division of Water Resources
State Department of Education
    Division of Instruction
State Department of Health and Environment
    Division of Environmental Health
    Health Education Services
State and Extension Forestry

Federal Agencies

Bureau of Reclamation, Kansas Reclamation Office
Farmers Home Administration
Soil Conservation Service, U.S.D.A.

Business and Industry

Kansas Association of Commerce and Industry
Kansas Bankers Association

Elementary and Secondary Education

Seaman Unified School District #345
Shawnee Mission Environmental Education Resource Center

As a first major step in reaching its goals, KACEE in 1974 developed and distributed the Environmental Education Resource Directory for Kansas. The directory was designed to let environmental educators, be they teachers, youth leaders, or concerned citizens, know what resources are available to them within the state.

KACEE's ability to support and promote environmental education lies in the broad base of diverse interests and capabilities represented by its various member organizations. Aside from the Resource Directory, it has developed no environmental education materials of its own. The Advisory Council can coordinate and refer requests for environmental education assistance to the proper member organizations. At annual Spring and Fall meetings, the membership of KACEE explores various aspects and concerns of environmental education in Kansas.

As noted above, KACEE has a major role in the development of a state plan for environmental education, and as a legally-recognized advisory group to the state department of education.

Address: KACEE
2610 Clafin Road
Manhattan, Kansas 66502
(913) 532-5752

Outdoor Education Workshop

An outdoor education workshop sponsored by the U. S. Forest Service, Kansas State University, and the State Department of Education was held at Rock Springs Ranch in September; it drew about 90 participants, including teachers, supervisors, and administrators. Dr. Robert James, Kansas State University, was contact person. Plans are to make this an annual program during the summer months, with more student participation. A pilot of this type of program at the same location last year drew more than 300 4-H youth from four states.

Summary

Although progress in environmental education is slower in Kansas than in many states, a steady growth of interest is noted, with many teachers now including units of environmental concern within their regular subject areas.

- Clayton Stultz, Specialist
Economic Education
State Department of Education
State Education Building
120 East 10th Street
Topeka, Kansas 66612
(913)296-3918

October 1975

KENTUCKY

State Plan for Environmental Education

Kentucky's Plan for Environmental Education was formally initiated in December 1972 with a statewide conference for Environmental Education. The significance of this conference is well illustrated by the participation of over 130 individuals representing more than 65 interest groups throughout Kentucky. Major discussion sessions during the three-day period identified needs, resources and strategies for developing Kentucky's Environmental Education Program into a unique and successful educational undertaking.

Using the base data gathered at the Barkley Conference, the Advisory Council for Environmental Education to the Kentucky Department of Education began expansion and detailed development of the planning document.

Official recognition of this document was achieved in September 1975 with formal adoption by the Kentucky Board of Education. A review and revision process incorporated within the Plan provides for periodical examination of the document and provides for appropriate changes.

Environmental Education Legislation

The importance of the environment has been officially recognized in Kentucky, by educators and by other decision-makers, since 1944. Kentucky Revised Statute 158.280, enacted 1944, deals directly with the topic of conservation of the environment. It states that:

> Instruction in all phases of conservation and preservation shall be included in the curriculum of the public schools of Kentucky; and textbooks, regarding the proper use and protection of forests, soils, water, minerals and wildlife shall be prepared or selected by the State Textbook Commission for this purpose.

Thus, Kentucky joined in the National movement toward "conservation education." Once again, in 1972, the Kentucky legislature made a significant move in endorsing the environmental study program in Kentucky. The 1944 law was amended to read "environmental study"; and "environment" in those places where the term "conservation" had been previously used.

Current efforts are being directed toward revision of the existing legislation to include expansion of staff within the Kentucky Department of Education and to provide funding for LEAs, and related programs.

Teacher Certification for Environmental Education

There is none, and none is planned.

Consultant

Terry Wilson, State Consultant, Environmental Education, Kentucky Department of Education, Capitol Plaza Tower, Frankfort, Kentucky 40601; (502) 564-3505.

Advisory Council

Under its own initiative, the Kentucky Department of Education has appointed an Environmental Education Advisory Council which will study aspects of the field and make recommendations to the Department.

The only limitation imposed on the Council is that in identifying problems, the Council is asked to offer concrete solutions. Recommendations will be based on firm data collected during the investigatory period.

Unlike some homogeneous advisory groups, membership consists of educators and non-educators from a wide range of environmental interests.

Active Advisory Council Members

Robert H. Baker, Professor, Department of Elementary Education, Eastern Kentucky University, Richmond 40475.

Juanita Blankenship, Teacher, John Adair Elementary School, Columbia 42728.

Russell Bradt, Teacher, Belmont Junior High School, Winchester, 40391.

Bill Branan, Coordinator, Environmental Programs, Pine Mountain Environmental Education Center, Pine Mountain 40864.

William S. Bryant, Instructor, Biology Department, Thomas More College, Fort Mitchell 41017.

Ruth Fishback, Member, Buckley Hills Audubon Society, Versailles 40383.

Sherry Florence, Teacher, Jeffersontown High School, Jeffersontown 40029.

Bill Gayle, Director, Division of Conservation, Department of Natural Resources and Environmental Protection, Frankfort 40601.

James Gilpin, Director, Conservation Education, Department of Fish and Wildlife Resources, Frankfort 40601.

Phil Hastings, Specialist, Environmental Education, Mammoth Cave National Park, Mammoth Cave 42250.

Janet Hounshell, Teacher, L.B.J. Elementary School, Jackson 41339.

Jerry F. Howell, Director (Chairman), Environmental Studies, Morehead State University, Morehead 40351.

Peggy Hyland, Director, King Center, Nazareth 40048.

Lionel Johnson, Staff Officer, Daniel Boone National Forest, Winchester 40391.

Hugh Jones, Member, Education Committee, National Association of Conservation Districts, Henderson 42420.

Gerrit Kloek, Professor, Department of Biology, Kentucky State University, Frankfort 40601.

Charles Livisay, Retired Teacher, Bryan Station Senior High School, Lexington 40508.

James Major, Coordinator, Science and Environmental Education, Paducah Public Schools, Paducah 42001.

Harold Massey, Director, Madisonville Community College, Madisonville 42431.

Sie Mills, Supervisor, ROPES Region 13, Barbourville 40906.

Ray Muffett, Coordinator, Project of Environment and Early Childhood Education, Title III, ESEA Kentucky Region V, Somerset 42501.

Barbara Owens, Teacher, Rockcastle County High School, Mt. Vernon 40456.

Scott Ranger, Director, Union College Environmental Education Center, Middlesboro 40965.

Jack Rose, Professor, College of Human Development and Learning, Murray State University, Murray 42071.

Mary Sprague, Member, Hardin County Environmental Council, Elizabethtown 42701.

Roy Winchester, Superintendent, Henry County Schools, Newcastle 40050.

Sally Wooten, Teacher, Mayfield Elementary School, Richmond 40475.

Past Advisory Council Members

Charles E. Baker, Environmental Science Division, Sterns-Rogers Corporation, Denver, Colorado 80217.

Billy S. Blankenship, Professor, Environmental Education, Murray State University, Murray, Kentucky 42071.

Chuck Crume, Wildlife Artist, Shepherdsville, Kentucky 40165.

Harold Grooms, Teacher, Bourbon County High School, Paris, Kentucky 40361.

Frank Howard, Consultant, Science Education, Department of Education, Frankfort, Kentucky 40601.

John Paulk, Project Manager, Environmental Education, Tennessee Valley Authority, Norris, Tennessee 37828.

Adonna Riley, President, Kentucky Congress of Parents and Teachers, Frankfort, Kentucky 40601.

Pete Westover, Conservation Officer, Amherst Conservation Commission, Amherst, Massachusetts 01002.

Ex-Officio Members

Lynn Hodges, Specialist (Secretary), Environmental Education, Tennessee Valley Authority, Land Between the Lakes, Golden Pond, Kentucky 42231.

Terry Wilson, State Consultant, Environmental Education, Kentucky Department of Education, Capitol Plaza Tower, Frankfort, Kentucky 40601.

Publications

High Priority for the 70's, Environmental Education: 12-page brochure familiarizing public with general philosophy and scope of Environmental Education.

Planning for Environmental Education: The Barkley Conference: Multi-paged document of agency and proceedings of Kentucky's initial statewide planning session.

Planning for Environmental Education: Kentucky River Area Development District: Regional document of agenda and proceedings of a regional planning session published as a model for similar meetings.

Hands on Kentucky: Science 4-6, Hands on Kentucky: Sights and Sounds 4-6: Model curriculum units giving an exemplary framework for teacher-developed curricula. Piloted in spring of 1972.

Kentucky Plan for Environmental Education: Planning document for Environmental Education in Kentucky including goals, objectives, and activities. Details roles of educational and non-educational groups, and establishes time frame for implementation.

Situation Assessment

The Kentucky Department of Education lists the following two goals of education when referring to the overall educational goals in Kentucky:

1. Awareness of one's relationship to his physical environment and the wise use of resources.

2. Understanding the effects of technology and of population growth on the environment.

There have been many sources of input in the development of these goals. Much is based on the historical development of environmental education in Kentucky, although inputs from inside and outside the Kentucky Department of Education have also played major roles.

Historical Development of Environmental Education in Kentucky

As early as 1941, Kentuckians felt the need for an organized education program based on natural and manmade environments. The Kentucky Department of Education and the Kentucky Department of Fish and Wildlife Resources published a 1941 curriculum guide for teachers, Units in Conservation of Wildlife and Other Natural Resources. Soon to follow, in 1944, the Kentucky legislature passed the Kentucky Conservation Education bill. This statute empowered the Department of Education to implement and develop this program in Kentucky schools. Special emphasis was given to the conservation and preservation of soils, forests, water, minerals and wildlife.

By the early fifties an identifiable emphasis was being placed on outdoor education and nature study by many educational and recreational groups in Kentucky. During this time, numerous residential and non-residential conservation camps were established throughout the Commonwealth. It was through these camps that the philosophy of the conservation education program merged with the techniques of the outdoor education school.

With the coming of the sixties, the space age had special implications for environmental education. Science received the educational spotlight and major revisions were made in both content and process areas of science education. Among the various science areas to emerge as innovative curriculum was ecology. Ecology, and the special attention given to scientific exploration of the environment, was to be the preluding science to environmental education. This science was limited, however, to those scientifically inclined.

The layman was limited in his understanding of ecological principles until the late sixties. A national phenomena, Earth Day, successfully merged the academic, professional, and lay communities in 1970 into an active group with common interests. The educational result was a composite program of conservation education, outdoor education, and ecology. Although environmental education contained elements of each of these previous programs, it evolved into a unique program, separate from but inclusive of previous programs.

In Kentucky, the environmental educational program was formally instituted by the State Board of Education in a resolution assigning primary responsibility to the Bureau of Instruction. Since this resolution stated changing needs as a primary consideration, the program was initially formulated to meet specific needs. As these needs were met and new needs evolved, environmental education began to reach into non-traditional areas. The first consultant assigned specific duties in environmental education was the State Science Consultant. Under his direction two major steps were taken. The first major step was the development of an interim planning document, the State Plan for Environmental Education Development published in 1970. The SPEED documents outlined the roles and resources in Kentucky that were needed in order to implement a total environmental educational program.

The second major step was the organization and implementation of a statewide writing conference to develop environmental education curricula. This conference was held during the summer of 1971 at Cumberland Gap National Historical Park and included members of the Kentucky Department of Education, public and private school personnel, and a variety of representatives from other Kentucky institutions. The results of this conference were eventually published as the first two curriculum units, Hands-On Kentucky: Science 4-6 and Hands-On Kentucky: Sights and Sounds 4-6. These model units were piloted during the spring of 1972 in the following schools:

Watson Lane Elementary Jefferson County	Booker T. Washington Fayette County

Owen County Elementary
Owen County

LBJ School
Breathitt County

Lynvale Elementary
Hardin County

Howe Valley Elementary
Hardin County

Middlesboro East Elementary
Bell County

Barbourville Elementary
Knox County

In the fall of 1971, a full-time consultant was placed on the staff of the Bureau of Instruction with responsibility for environmental education program development and implementation. Through existing and developing programs in conservation education, outdoor education and ecology, new programs began to surface that were a mixture of past programs, but with newer elements and goals. These were the first environmental education programs. With leadership provided by the Kentucky Department of Education, ties were strengthened with existing state agencies, local agencies, as well as the federal agencies involved in programming for environmental education. In 1972, the Kentucky Conservation Education Statute of 1944 was revised and terminology updated with direct reference to environmental education rather than conservation education.

A very active year, 1972, was highlighted by a statewide conference, "Planning for Environmental Education." The conference purpose was to identify needs, resources, goals and objectives for environmental education in Kentucky. Over 100 individuals, representing more than 60 local, state and federal agencies, community groups, public and private schools, colleges and universities, and governmental leaders, spent three days in developing guidelines and recommendations based on their identifications of priority items. Some direct results of the Lake Barkley "Planning for Environmental Education" conference emerged as a statewide series of student leadership training courses provided by Students Toward Environmental Participation (STEP), as a periodical newsletter published by the Kentucky Department of Education, and as a formalized Advisory Council for Environmental Education to the Kentucky Department of Education. This advisory council assumed the major responsibility for providing the Kentucky Department of Education with proposals and recommendations relating to environmental education in the spring of 1974 and in 1975.

Input from Within the Kentucky Department of Education

Bureau of Instruction: The Bureau of Instruction has the major responsibility for program development within the Kentucky Department of Education. It is within this bureau that the concept of a total environmental education program for Kentucky was conceptualized. In addition to its staffing of the State Consultant for Environmental Education, this bureau has published curriculum models, maintains a vast collection of curriculum materials including the ERIC system, has sponsored special subject areas (i.e., math, science, language arts, social studies, art, media center) conferences which include components of the environmental education program, and has the primary responsibility for development and promotion of environmental education in Kentucky.

Within the Bureau of Instruction are housed the special federal programs relating to education, several of which have had input into environmental education. One of these programs is ESEA Title III. It was through Title III that many of the early attempts at integrating the environmental education program into the formal educational structure were funded. Significant "pioneer" programs included the Paducah, Kentucky school system and its publication of Objectives and Field Activities for Environmental Education in the mid 60's, and the model outdoor laboratory in Bourbon County, Kentucky during the same time period. Later, in the early 70's, the Region IV-B project at Bourbon County was expanded into a regional effort inclusive of both school site developments coordinated with curriculum development. During the 70's, ESEA Title III, Region VI, housed at Eastern Kentucky University also implemented a series of teacher awareness workshops and provided over 300 teachers with practical field experiences and college credit. In Somerset, Kentucky, Title III developed Project PEECE, Project for Environmental and Early Childhood Education, which involved teachers in exemplary curriculum development and resulted in the publication of a K-12 curriculum guide. These innovative programs funded through ESEA Title III provided a firm base of reference for the many additional programs that were to develop in Kentucky.

The Bureau of Vocational Education in Kentucky has contributed to the overall environmental education program through its training of environmental aides and resource field personnel. Other services have been in relation to environmental career opportunities and special sessions involving training in areas of conservation of natural resources.

Teacher certification has received much controversial publicity nationally with respect to environmental education. Kentucky has no certification requirement for educators using environmental education or for individuals administering environmental education programs. The Division of Teacher Education and Certification has several programs that relate to environmental education from the perspective of community development. Drug awareness is typical of these supportive programs.

The Kentucky Department of Education draws on the resources of many local, state and federal agencies for the development and promotion of environmental education. These multi-agency, cooperative programs have been sponsored under the auspices of a variety of groups, including the National Park Service and UNESCO, both sponsors of the Students Toward Environmental Participation (STEP) program, and the U.S. Forest Service, co-sponsor of the Youth Conservation Corps (YCC). In addition to co-sponsoring such program efforts, the Kentucky Department of Education serves in an advisory and consultatory capacity to numerous groups.

Input from Outside the Kentucky Department of Education

As an early leader in the field of conservation education, the Kentucky Department of Fish and Wildlife Resources co-sponsored a curriculum guide with the Kentucky Department of Education in August 1941. Over the years, this state agency has been consistent in providing educational services throughout the state. They have made available to Kentucky schools a wide range of services, including the use of conservation officers for periodic presentations, an excellent film library on conservation themes, and three summer camps. Structured to serve the upper elementary students, these camps are geographically spaced across the state. In summer residence programs, students are exposed to an intensive program of recreation and education as they relate to conservation education and related skill development.

Another highly supportive branch of state government is the Kentucky Department of Natural Resources and Environmental Protection. Much of the support is elicited through the National and Kentucky Association of Conservation Districts. An annual activity of this state agency is the sponsorship of the Conservation Essay and Poster Contest, which originated shortly after the passage of the Kentucky Conservation Statute of 1944. It is co-sponsored by several state agencies and the Louisville Courier-Journal and Times newspapers. With an annual theme change, this contest requires that the student write an environmental essay or create a poster. The 1944 participation of less that 200 students has increased to an annual participation of more than 90,000 students. Although a single activity, this contest is well received throughout Kentucky.

Serving in an advisory capacity to the Kentucky Department of Natural Resources and Environmental Protection is the Environmental Quality Commission. In the few years since its inception, this group has been instrumental in providing mini-grants for public education programs, and has served as a vehicle for public involvement in environmental decision-making.

Kentucky is especially fortunate in having several environmental education centers functioning as residential resource centers throughout the state. Although the use of these centers by no means constitutes a total environmental education program, schools using these facilities find the activities and programs useful in rounding out their total education program. In their chronological order of development, these centers are Land Between the Lakes Environmental Education Center, Union College Environmental Education Center, Pine Mountain Environmental Education Center, and King Environmental Education Center.

Land Between the Lakes is located in western Kentucky and Tennessee. The environmental education center, 5200 acres, is located in the center of the 170,000 acre peninsula. Two residential facilities, one in Kentucky and one in Tennessee, provide meals and housing for student groups using the area on a residential basis. Staff at Land Between the Lakes provide intensive teacher training prior to use of the area. General orientation to the area as well as program possibilities is discussed in depth. While at the facilities, the regular school personnel are not involved in the teaching of students, except in rare instances when they serve as general resources aides and experts in specific fields. Land Between the Lakes is a national demonstration area for environmental education programs as well as for outdoor recreation and is a major project of the Tennessee Valley Authority.

Union College Environmental Education Center is located in Cumberland Gap National Historical Park at Middlesboro, Kentucky. A joint project of Union College and the National Park Service, the environmental education center was developed from an abandoned Job Corps Center. The center is well located for study of both the cultural and physical influx of civilization into Kentucky. Staff at the center provide special assistance prior to the residential experience and while in residence. The immediate proximity of the Park and the excellent interpretive program are assets to the programs available at the center.

Just west of the Union College center, and north of Pineville, Kentucky, is Pine Mountain Environmental Education Center. The center is representative of the physical and cultural lifestyles of the mountain environments. Drawing heavily from local resource personnel as resource aides and general employees, this center allows students to experience firsthand the unique cultural traits of the area. Archaeological digs are readily available and strip mining operations are but a short drive away. The seclusion and beauty of this 600-acre facility provide an ideal setting for environmental study and reflection.

As the needs for diverse environmental settings and centers increased in Kentucky, King Environmental Education Center was developed on the site of a former private college, Nazareth, near Bardstown, just 30 miles south of Kentucky's largest metropolitan area. This center effectively mixes the outdoors with its well-stocked laboratories and library. Of special interest to the many urban schools using the facilities is a 140-head working dairy herd. The King Center can house and feed large numbers of students and teachers (up to 300).

In addition to the residential resource centers in Kentucky, there are numerous museums and nature centers that have made significant contributions to Kentucky's Environmental Education Program. One is the Buckley Hills Audubon Society which has provided assistance to educational programs for several years. They have provided a nature center for use by all groups as well as sponsoring annual teacher training workshops, and providing reference materials for schools in the central Kentucky area.

Another regional resource for the public and the schools is Bernheim Nature Center. This area, between Sheperdsville and Bardstown, has been a longstanding favorite of visitors interested in the unique botanical and artistic plantings. The nature museum offers visitors an introduction to the area and the extensive trail system allows firsthand exploration.

The Kentucky Department of Parks is making significant progress in the development of resource centers in the state parks. Initially, efforts have been at Carter Caves State Park and Pine Mountain State Park, but plans have been established for the other state parks. In addition to area development, the Kentucky Department of Parks sponsors a traveling nature museum and employs several interpretive naturalists within its system.

More recent developments in the area of non-residential resource centers include the Living Arts and Science Center, Lexington, Kentucky, the Otter Creek Project, Louisville, Kentucky, and a wide range of recreational-educational centers sponsored in conjunction with the American Camping Association.

In addition to localized regional and state programs and facilities, Kentucky is fortunate in having several federal agencies actively involved in the promotion and development of environmental education. The National Park Service operates three major parks in Kentucky. Cumberland Gap National Historical Park is home for the Union College Environmental Education Center. Mammoth Cave National Park, the largest of the NPS holdings in Kentucky, has developed a comprehensive environmental educational program based on the NEED (National Environmental Educational Development) and NESA (National Environmental Study Areas) programs which serve primarily day-use groups from surrounding schools. Abraham Lincoln Birthplace National Historical Site is the third site operated by the National Park Service.

The U. S. Forest Service is another federal agency actively involved in environmental education programming in Kentucky. The primary resources of the U. S. Forest Service are the Daniel Boone National Forest and Berea Research Center, both of which are located in eastern Kentucky. Forest Service personnel assist school systems in the development of materials and serve as resource aides to programs in the area. Many nature and hiking trails are maintained at their recreational areas throughout the Daniel Boone National Forest.

A program of the USFS and NPS is the Youth Conservation Corps. This program is active in areas supervised by the Forest Service and National Parks, with major emphasis in the Daniel Boone National Forest and Mammoth Cave National Park. Federally-assisted state-grant YCC programs included those in Bowling Green and Elizabethtown during the summer of 1974. During this past summer, Kentucky had the largest (100) and the smallest (6) YCC programs in the nation.

Another major federal agency in Kentucky is the Tennessee Valley Authority. Active throughout Kentucky, the TVA serves as consultant to a wide variety of environmental educational programs. The primary focus of TVA's activity is centered in western Kentucky at Land Between the Lakes.

Another branch of the U. S. Department of Agriculture's services in environmental education is the Soil Conservation Service. This agency has been extremely active in the promotion and development of school site laboratories and outdoor classrooms in both urban and rural settings. Many local SCS representatives serve as advisers to area school groups and faculties.

Although established to promote environmental education on a national level, the U. S. Office of Education has had minimal impact on Kentucky's environmental education programs. The three programs funded under P. L. 91-516, the Environmental Education Act, in Kentucky were Morehead State University (1971 and 1972) and Bellarmine College (1972). No funding was received in 1973 or 1974.

Kentucky's institutions of higher education are becoming increasingly more involved in environmental education. Several have sponsored teacher training and awareness workshops and career development in environmental fields is being successfully taught. Although not implemented on a large scale, pre-service teacher education is gaining in prominence and is expected to be a major contribution to environmental education.

- Lynn Hodges, Specialist
Environmental Education
Tennessee Valley Authority
Land Between the Lakes
Golden Pond, Kentucky 42231
(State Consultant 1971-73)

- Billy S. Blankenship, Professor
Environmental Education
Murray State University
Murray, Kentucky 42071
(State Consultant 1973-75)

- Terry Wilson, State Consultant
Environmental Education
State Department of Education
Capital Plaza Tower
Frankfort, Kentucky 40601
(502) 564-3505

November 1975

LOUISIANA

At present, Louisiana still does not have a state plan for Environmental Education, nor teacher certification requirements.

An environmental education advisory committee is presently working with the State Department of Education in establishing a state environmental education center. Master plans were completed during the summer of 1975. The document is entitled Indian Creek Environmental Education Center: A Master Plan.

The Louisiana Environmental Education Advisory Council is composed of the following people:

Mr. Don W. Truly, Principal, Apollo Elementary School, Bossier Parish.

Mr. James Mixon, State Forester, Louisiana Forestry Association.

Mr. Sam A. Distefano, Superintendent, Icerville Parish Schools.

Mr. Pat Ryan, Executive Director, Louisiana State Planning Commission.

Mr. J. Burton Angelle, Director, Louisiana Wildlife and Fisheries Commission.

*Mr. Roland Treubig, President, Soil Conservation Society of America.

Mr. Rex C. Pearce, Executive Director, Louisiana Independent School Association.

Mr. Travis Funderburk, Assistant Superintendent, Rapides Parish Schools.

Mr. Roy G. Aguillard, Director, Department of Public Works.

Mr. Bentley Mackay, Jr., Executive Director, Governor's Council on Environmental Quality.

Mr. Gilbert C. Lagasse, Director, Louisiana State Parks and Recreation Commission.

Honorable Samuel B. Nunez, State Senator.

Honorable Richard Thompson, State Representative.

Honorable Edward G. Randolph, Jr., State Representative.

*Mr. Fred Huenefeld, Jr., Chairman, Governor's Citizen Council on Environmental Quality

*Mr. Alton Mangum, State Conservation, Soil Conservation Service.

Mr. Isadore Inman, Jr., Director, Environmental Education Curriculum Development Program.

Mr. Gordon R. Condit, President, Louisiana Forestry Association.

Mr. Fred Stanek, Louisiana Wildlife Federation.

*Mr. Bill Bailey, Director of Public Affairs, Mid-Continent Oil and Gas Association

Mr. Edgar C. Hathorn, President, Louisiana Police Jury Association.

*Mrs. Doris McWilliams, President, League of Women Voters of Louisiana.

Mrs. Gladys H. Robinette, Associate Professor, Teacher Education, University of Southwestern Louisiana.

*Mr. Jack Ensminger, Biology Department, Grambling State University.

Mr. Raymond Terr Sutton, Commissioner, Department of Conservation.

Mr. Howard P. McCollum, Associate Superintendent, School Programs, State Department of Education.

Mr. Volover W. Williams, Director, Early Childhood and Elementary Education, State Department of Education.

*Dr. Edward W. Dayton, Jr., Supervisor, Science and Environmental Education, State Department of Education.

* Executive Committee

As in the past, there is a tremendous cooperative effort for the total environmental education program between state and federal agencies and colleges and universities, all coordinated through the State Department of Education. Several summer in-service teacher training workshops have been held.

In April of 1975, a technical resource workshop was held in which thirty resource personnel participated. These participants will be used to form teams throughout the state to assist local school systems in initiating environmental education programs.

The following ESEA, Title III programs are being conducted in the state:

Environmental Awareness Through Outdoor Classroom
LaSalle Parish
Olla Standard Elementary
P.O. Box 926
Olla, Louisiana 71465
Ray Duke, Principal and Contact Person

Environmental Learning Grounds
Orleans Parish
McDonogh No. 15
721 St. Philip Street
New Orleans, Louisiana 70116
Mrs. Lucianne B. Carmichael, Principal and Contact Person.

- Edward W. Dayton, Jr., Supervisor
Science and Environmental Education
State Department of Education
P.O. Box 44064
Baton Rouge, Louisiana 70804
(504) 389-5627

August 1975

MAINE

State Plan for Environmental Education

The Maine State Plan for Environmental Education was completed, approved and published in 1974. The drafting of the Plan was begun in 1971 with the appointment of a twelve member writing committee by the Commissioner of the Maine State Department of Educational and Cultural Services. The committee included representatives of a broad spectrum of interests. During the next two years the committee identified needs, suggested goals, pinpointed target audiences and made preliminary recommendations. Following the wide circulation of the draft plan for review and suggestions, it was revised and submitted for approval.

The State Environmental Education Plan is designed to reach Maine citizens in all walks of life. It is brief and succinct. The plan outlines its purpose, discusses the need for environmental education, presents a definition and gives general recommendations for the implementation of its goals. Four separate sections present statements of need and recommendations in the areas of: (1) Preschool, Elementary and Secondary Education, (2) Higher Education, (3) Formal Adult Education, and (4) Non-formal General Public Education.

On September 1, 1975, the major recommendation for implementation of the plan was carried out with the employment of a state environmental education consultant. The consultant will fill a joint position between the State Department of Educational and Cultural Services and the Center for Research and Advanced Study of the University of Maine at Portland-Gorham. For the state educational agency the consultant will implement the plan. In the Center's Allagash Environmental Institute the consultant will develop and direct environmentally oriented research projects.

Environmental Education Legislation

Current school law in Maine calls for the teaching of "..the importance of voting and the privileges and responsibilities of citizenship.." and, "A course in geography and the natural and industrial resources of Maine.." These segments of the law do relate to several aspects of environmental education. However, specific legislation initiated in 1973 to more clearly define the goals and purposes of environmental education and provide for its teaching was unsuccessful. At the present no plans have yet been formulated for future legislative attempts.

Teacher Certification

Currently environmental education coordinators and others who are teaching in the public schools of Maine must hold a valid teaching certificate in a related field, such as science. No special requirements for certification in environmental education exist at the present time.

State Consultant

Dr. Dean B. Bennett, State Environmental Education Consultant, Maine State Department of Educational and Cultural Services, Augusta, Maine 04333. (207) 289-2541.

The consultant's position is a joint research and public service position between the University of Maine's Center for Research and Advance Study at the Portland-Gorham Campus and the State Department of Educational and Cultural Services. The consultant maintains two offices - one in Portland and another in Augusta, the state capital. Each office has a secretary. The consultant has access to the resources of the State's two largest educational institutions. The major functions involve (1) implementation of the State Environmental Education Plan, particularly in the areas of elementary-secondary education and teacher in-service education and (2) development of research projects in environmental education and related fields.

Environmental Education Advisory Board

No advisory board is called for by the State Plan. However, plans are underway to establish a committee which will aid the consultant in implementing the Plan.

Environmental Education Publications

No special environmental education publications have been produced by the State Department of Educational and Cultural Services at this time. However, several are being planned in areas of (1) funding sources and proposal writing, (2) program development, (3) site use, (4) community resources, (5) teaching community problems and (6) program evaluations.

Exemplary Public School Activities in Environmental Education

Project TREE (Teaching Respect through Environmental Education) Title III, E.S.E.A., Director, Dorothy D' Alessandro; Environmental Educator, Sheila K. Bennett, Brookside School, Waterville, Maine 04901.

This project is developing, applying and testing approaches to improving the attitudes and behavior of elementary school pupils so that they will become concerned responsible citizens committed to solving environmental problems. The humanizing philosophy of Glasser's "Schools-Without-Failure" program is combined with a school-wide (750 K-6 students) multidisciplinary approach to environmental education. These two components of the project are mutually supportive. The "Schools-Without-Failure" program will lead to changes in attitudes and behavior and develop the traits of good citizenship necessary to carry out the environmental commitment.

The multidisciplinary approach to environmental education will provide opportunity for teachers and students to unite in scientifically and socially oriented activities pointing up the interrelationships of all living things. The result of this mutual reinforcement will be responsible people with positive self-concepts working cooperatively to resolve environmental problems.

Locally funded K-12 school-wide environmental programs with full-time coordinators are:

Kennebunk-Kennebunkport School System SAD #71
Susan Anghinetti, Environmental Education Coordinator
Park Street School
Kennebunk, Maine 04043

Calais School System
Robert Shafto, Environmental Education Coordinator
Washington Street School
Calais, Maine 04619

Locally funded K-12 school-wide environmental education programs with part-time coordinators are:

Yarmouth School System
Wesley H. Willink, Environmental Education Coordinator
Intermediate School
Yarmouth, Maine 04096

Oxford Hills School System, SAD #17
John B. Craig, Jr.
Oxford Hills High School
South Paris, Maine 04281

Many other local educational agencies, public and private, are involving students in environmental studies.

College and University Activities in Environmental Education

Currently, the University of Maine at Orono has established a masters degree program in environmental education. The State educational agency and the University are also exploring opportunities to provide teachers with a state-wide in-service graduate program. The Maine Conservation School at Bryant Pond operated by the Conservation Education Foundation of Maine in conjunction with the State

Department of Educational and Cultural Services and the University System continues to offer programs for teachers and grade level students. Most of the State's private colleges have now developed environmentally oriented programs.

State Agency Activities in Environmental Education

State agencies and private organizations have cooperatively established an organization called the Maine Environmental Education Forum to discuss and resolve mutual environmental education problems. The group's first project has been the establishment of an environmental packet service available to organizations, libraries, teachers and students throughout Maine. Eighteen packets are now available on loan from the Maine State Library.

Other Environmental Education Activities

The State has now adopted the Computer Based Resource Units (CBRU's) developed and tested by the New Jersey State Council for Environmental Education. These are available to educators throughout Maine.

- Dr. Dean B. Bennett
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October 1975

MARYLAND

The objective of the State Department of Education's environmental education efforts is the initiation of a comprehensive program of environmental education in all elementary and secondary schools in the State of Maryland. Activities to date have included leadership workshops and the preparation of curriculum materials.

In January of 1970, the State Board of Education adopted a resolution calling for the establishment of a planned program of environmental education in all of the schools. A State Advisory Committee recommended approaches to be taken and a State Education Department Staff has been involved in public information, providing leadership training, multi-state planning, and the preparation of a curriculum framework.

The curricular framework is now available and the State Staff is working in implementation in all the schools. This framework identifies goals, objectives, and student behaviors for different grade levels of students.

Among documents produced are:

1. Education and the Environment. Report of a Multi-State Conference, November 8-10, 1971, Annapolis, Maryland.
2. Report to the Governor of Maryland and Maryland General Assembly.
3. Environmental Education, A Maryland Approach.

We also have prepared a special guide for Aesthetics and the Environment.

We have received only limited funding for environmental education. Funds from the U.S. Office of Environmental Education have not been made available to support these efforts.

- Dr. James W. Latham, Jr.
Consultant in Science and Environmental Education
State Department of Education
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(301) 796-8300 Ext. 418

November 1975

MASSACHUSETTS

State Plan for Environmental Education

On May 5, 1961, the Governor signed an Act which established the position of Conservation Education Supervisor within the Commonwealth's Department of Education. Shortly thereafter, The Board of Education appointed the Massachusetts Advisory Committee on Conservation Education (MACCE) to advise the Supervisor of Conservation Education and the Commissioner of Education. Since that time, the MACCE Committee has been responsible for a number of conferences and reports, including recommendations to the Special Commission relative to improving and extending educational facilities in the Commonwealth, which is informally known as the Willis-Harrington Commission. The MACEE Committee has also offered assistance from time to time to the Department of Natural Resources in connection with review of sites for the development of a state environmental center.

In May of 1970, the MACCE Committee established a sub-committee to begin work on the Commonwealth's Commitment to Environmental Education. The sub-committee spent the summer and ensuing year putting together the first efforts towards a State Plan. In October of 1970, the Environmental Education Act (P.L. 91-516) was signed into law by President Nixon. The Act required that all states have a State Plan by the end of 1972. In April of 1971, the MACCE Committee voted to submit a proposal under the Environmental Education Act for money to set up a Task Force more broadly based than the Committee, and with some paid personnel to carry on the work already accomplished by the MACCE sub-committee. The proposal was one of six state planning grants funded and the Task Force met in September of 1971 to start work in earnest on an environmental education plan for the Commonwealth.

The Task Force was charged with three priorities during its first year of operation:

Its first job was to assess all aspects of environmental education programs currently in progress at all educational levels within the Commonwealth. Of particular interest were those programs which involve the participant directly in explorations of natural and manmade environments and those which provide action to resolve environmental programs.

A second priority was to determine the environmental education needs within the Commonwealth and to establish priorities within those needs. Since priorities change with changing times and a plan can be obsolete when written, a proposal for an on-going state planning system was a third priority and a Trust for Environmental Education - TRUST-EE - has been developed for consideration. Such plans or planning systems are required in all of the 50 States if they are to receive further federal funds for environmental education in the future. Both the Massachusetts Advisory Committee on Conservation

Education and its Environmental Education Task Force have put in a considerable amount of time and effort in achieving the three objectives. The Task Force has pulled together a great deal of material into a coherent report which explains not only the current state of environmental education within the Commonwealth, but also defines the needs as seen by educators, federal and state agencies, and public and private organizations from all over the state. These needs have been set up in terms of priorities for implementation by the Commonwealth. The planning system, in the form of a trust instrument and operating procedures for the Trustees, has also been spelled out in detail.

Environmental Education Legislation

Legislation involving the establishment of a Fund for Environmental Education was introduced in the House in January 1975. Suggested uses for FEE are to include the creation of Regional Environmental Education Centers and Environmental Education Curriculum Research, Development and Dissemination Centers. This legislation has not been approved at this time.

Teacher Certification

There is no teacher certification relative to environmental education at this time.

State Coordinator for Environmental Education

The Massachusetts State Department of Education has no person specifically assigned to environmental education, nor is it anticipated that this position will be filled during the next year.

Task Force Activities

In addition to working in committees on developing assessment instruments, surveying target groups, and compiling results with recommendations, members of the Task Force carried out a number of other activities at the request of state agencies or educational institutions. Perhaps the most significant role which the Task Force played was in the planning, implementation and evaluation of an Open Space and Recreation Management Course for the Institute of Governmental Services at the University of Massachusetts.

In January, 1972, the Task Force received a request from Dr. Arthur W. Eve, the Associate Director of the Institute for Governmental Services at the University of Massachusetts in Amherst. Dr. Eve wished to know whether the Task Force would be willing to be involved in the design, implementation and evaluation of Leadership Training workshops in Recreation and Open Space Management for a wide range of local government officials. A verbal agreement was reached, and the details outlined in further communication in April. Funds were provided by the Institute from a grant obtained under the Intergovernmental Personnel Act of 1970. Mrs. Nancy W. Anderson was hired to coordinate the project for the Task Force.

A series of eight two-and-one-half-hour sessions were designed for an eight-week period from May 9th through June 27th. The meetings were held at Tufts University in Medford, Massachusetts, on Tuesday evenings, free of charge. A Certificate of Participation was presented to those completing six out of the eight sessions.

Subjects explored included: The Ecology of Open Space and Recreation; Town Planning for Open Space and Recreation; the Use of the Law in Preserving Open Space; Regional and City Planning; Flood-Plain/Wetlands Zoning and Management; State and Federal Funding for Open Space, Conservation and Recreation.

Over ninety people from twenty-one communities and the State Department of Community Affairs and Natural Resources signed up to take the course. Attendance averaged around sixty per class. A formal evaluation of the course has not been completed at the time of this writing.

In addition to the course, MACCE members who were also members of the Task Force continued to work with the Department of Natural Resources in determining a site for the State's first environmental interpretive center. Meetings were held and three on-site evaluations of suggested locations were made. Recommendations were submitted in writing to the Department of Natural Resources.

Further activities of the Task Force included disseminating information on its work through meetings, speaking engagements and radio appearances by both the Chairman and the Executive Secretary. During the process of developing environmental education proposals for submission to USOE for funding in Spring 1972, the Executive Secretary and particularly the Chairman spent considerable amounts of time advising people on the technical requirements of P.L. 91-516 and also on the potential merits of projects in line with our then current assessment of environment education needs. Such advice was not limited to persons and groups in Massachusetts. Work of this nature was carried on with representatives of every New England state.

Exemplary Public School Activities

There were no new ESEA Title III environmental education programs funded in 1975 in Massachusetts.

Programs currently funded under Public Law 91-516 are located at Boston University, Education Development Center, Tufts University and WGBH Educational T.V.

Locally funded projects include:

1. Project EPIC - Westfield Public Schools
2. Project ECOS - Springfield Public Schools
3. Project Adventure - Hamilton-Wenitam Regular High School

- Raymond L. Gehling, Jr.
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Massachusetts Department of Education
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September 1975

MICHIGAN

State Plan

Michigan has a state plan for environmental education. This plan was developed by a task force appointed by the governor of the state. The plan was prepared with the assistance of a planning grant from the U.S. Office of Education, Department of Health, Education Welfare. The plan provides the framework, guidelines, and processes for coordinating and evaluating all environmental communication, education, and information activities in Michigan. Since the plan was developed in January, 1973, an interim committee has been developed by Governor Milliken to develop the ideas promulgated in the Michigan plan. The document is entitled Michigan's Environmental Future. Unfortunately, this document is no longer available for distribution, but is in the ERIC data base.

Legislation

There are two bills of importance in environmental education in legislation at the present time. One of the bills, in brief, establishes environmental education with the Michigan Department of Education along with identified responsibilities. Another bill would provide monies for two environmental education specialists and staff with the Michigan Department of Education.

Teacher Certification

Although many of Michigan's universities and colleges have varied programs for teacher certification for environmental education, there are certain requirements which seem to be common. Generally, the teacher certificate is based upon a science-ecology background. Often there will be earth science, fisheries, and wildlife consideration. Usually, the minor is in the biological sciences. The educational courses usually include methods, teaching, and so forth.

Specialist

The environmental education specialist for the Michigan Department of Education is Mr. Jack W. Kammeraad, Environmental Education Specialist, Michigan Department of Education, Box 420, Lansing, Michigan 48902. (517) 373-1484

Advisory Committee

The Michigan Department of Education has an advisory committee called the Michigan Environmental Education Referent Committee (MEERC). This committee is in the process of developing minimal performance objectives for all students K-12 in Michigan. Drafts of minimal performance objectives have been developed and this committee is in the process of developing test items for the performance objectives. Plans for validation of test items and performance objectives revisions are forthcoming.

Publications

Limited copies of a publication entitled Environmental Education Guidelines are available from the Michigan Department of Education. These guidelines establish the goals of environmental education for the educational community of Michigan. More specific performance objectives and test items are being developed for future use as a result of these goals. After validated test items (5 for each performance objective) have been developed, they will be made available to local school districts and teachers. Eventually, sampling of test items on State Assessment will give indications of student needs at various grade levels in Environmental Education. Beyond this, the Environmental Education delivery systems will be evaluated and this information will be made available to the local schools.

Exemplary Programs

Michigan has many exemplary environmental education programs throughout the state. However, most of these programs have been developed with local prerogative. We have two environmentally related programs under ESEA Title III. One of these is entitled "Affective Education Through a Combined Science-Environmental Alternative Program" (Lansing, Michigan). The other program is entitled "Discovery Through Outdoor Education" located in Mount Clemens, Michigan. This is an environmental education program for teachers of the mentally retarded.

College and University Activities in Environmental Education

Some of the universities have intern programs where students are sent out to work with environmental education projects. Often they will work as nature interpreters at school camps or nature centers.

Inter-Agency Cooperation

The Michigan Department of Education cooperates with other departments regarding environmental education activities. The subject area specialists work with government agencies regarding environmental impact statements, DNR activities, and the extension services. In addition to the environmental concerns of education, they also cooperate with efforts of professional organizations such as the Michigan United Conservation Corps.

Youth Conservation Corps

The Michigan Department of Education has the overall responsibilities for the recruitment of approximately 500 students for the Youth Conservation Corps. In addition, the Department is concerned with the educational and evaluational aspects of this fine program.

Michigan Environmental Education Association

It may be added that Michigan has an active state-wide group called the Michigan Environmental Education Association which periodically meets, both state-wide and regionally, on environmental issues. All of the groups mentioned actively support and interrelate to their goal of better Environmental Education for Michigan Schools.

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September 1975

MINNESOTA

Mission Statement for Fiscal Year 1976 Program Planning

Mission is pursuant to the 1969 Environmental Conservation Education Statute, Chapter 126.111, to prepare an interdisciplinary program of instruction for elementary and secondary schools in the field of Environmental Conservation Education. The program shall provide integrated approaches to environmental management consistent with socioecological principles, the production of appropriate curriculum materials and implementation in the public schools in the state.

Minnesota State Plan

The unique nature of environmental education is that it encompasses all subjects usually found in the school curriculum. Students should be allowed and encouraged to approach projects using skills they have gained through various subject areas; for example: science, mathematics, social studies, language arts, humanities. The development of an effective program should capitalize on this unique aspect. Suggested procedures:

1. State Department of Education Subject Matter Consultants should be encouraged to explore avenues which will allow them to function as members of a non-disciplinary team in matters relating to environmental education so as to serve as an example for school systems throughout the state to follow.

2. Curriculum Materials and Teaching Methods should be developed to:

    a. encourage, promote and/or require instruction by teams of teachers representing various subject areas;

    b. emphasize the interdependency of all elements of the environment;

    c. encourage the teaching of skills through which values are formed rather than advocating any particular value or set of values; that is students should be taught how to think, not what to think;

    d. deal with environmental problems in a rational and objective manner. Teachers and students should examine all sides of an issue;

    e. lead students to consider the importance of human relationships as a vital element in their environment. Values developed in this human environment affect our dealings with one another and the quality of these relationships is reflected in the relationship of people to their physical environment;

f. provide a balance between the necessary knowledge and outside-the-classroom project activities. One activity should supplement the other;

g. encourage, promote, and/or require instruction in a variety of situations, including both in-school and non-school environments;

h. begin with the students' local experiences which lead ultimately to an expanded view of the total environment; the curriculum should deal with local, state, regional, national and international concerns;

i. encourage students to undertake independent study projects through participation in non-school activities (such as evening community education classes, attendance at public hearings, governmental functions) for classroom credit.

3. Curriculum Implementation Plans should:

a. include methods by which programs can be evaluated in order to assist local schools in meeting their accountability responsibilities; school boards will ultimately have to prove the program's value to the public if environmental education is to acquire and maintain the public support needed to become a continuing program;

b. provide information about sources of supportive materials such as films, published materials and equipment necessary to the success of the program.

A training program for on-the-job teachers is the essential and logical companion to curriculum development. Such a program must provide materials, organization and staffing to reinforce the philosophy inherent in the non-disciplinary approach to environmental education. In-service teacher training cannot be effective without the support of teachers, administrators and school board members.

Just as on-the-job teachers need special environmental education training, so do students in colleges and universities pursuing degrees which will eventually qualify them to be classroom teachers. While it is extremely important that environmental education be integrated into all subject areas offered by post-high school institutions, vocational-technical schools, junior colleges, colleges and universities - there is no doubt that the training of new K-12 teachers should command the highest priority.

Objective

To coordinate the assessment, planning, implementing and evaluating of the Minnesota Environmental Education Program through the

Departments of Education's Environmental Education Steering Committee in which decisions relative to the mission, state plan and following sub-objectives are made.

Sub-Objective 1	To plan and prepare environmental education curriculum materials for the elementary and secondary schools in Minnesota.
Sub-Objective 2	To plan and conduct appropriate elementary and secondary environmental education in-service workshops throughout Minnesota.
Sub-Objective 3	To provide service and leadership to various agencies and organizations as a member of the Board of Directors, or similar advisory capacity, and to attend and participate in regularly scheduled meetings of these groups.

Goal #1:

To facilitate, coordinate, and/or manage assessing activities that result in identifying and listing key environmental education competencies by June 30, 1977.

Activities:

1. Develop a basic environmental education competencies format.
2. Design a method to integrate these identified competencies within appropriate subject matter areas.
3. Identify, develop and list sets of measurable objectives.
4. Develop a series of environmental education competencies guidelines.
    a. Basic Competencies - A guide related to the teaching and learning of major environmental education objectives viewed to be essential.
    b. Integrated High-Level Processes - A guide which represents a more generalized cognitive process as it relates to particular subject matter.
    c. Affective Considerations - A separate guide directed toward fostering appreciation toward subject matters, process, learning, self-evaluation, and related concepts.
5. As a result of this process, and in conjunction with other efforts, suitable materials would be identified and/or developed and would be available for in-service or for assisting individual educators in improving perceived needs in specific learning and educational areas upon request.

Goal #2

To facilitate, coordinate, and/or manage interdisciplinary planning activities that result in the improvement of educational decision-making.

Activities:

1. Develop a basic environmental education curriculum planning format.
2. Design a method to integrate the curriculum plan within appropriate subject matter areas.
3. Identify and train leadership personnel to direct the environmental education curriculum planning process.
4. Develop a series of environmental education curriculum planning and process guidelines.
    - a. Planning - A guide that will include sections relating to integrating environmental education with subject areas, learning and environmental education, environmental education curriculum materials inventory, curriculum materials identifiers, curriculum development and selecting and implementing curriculum materials.
    - b. Process - A guide that will outline the leadership methods and instructional strategies necessary for the implementation of the curriculum planning activity.
5. As a result of this planning activity, all Minnesota school districts would be encouraged to participate on a long-term basis.

Goal #3

To facilitate, coordinate, and/or manage implementation activities that result in the improvement of educational programs.

Activities:

1. Develop a basic environmental education implementation system for the following in-service activities:
    - a. Curriculum Planning Guide
    - b. Competencies Guidelines
    - c. "Adventure Environment" Educational T.V. Series
    - d. Associated in-service models, i.e., ECOS, Environmental Education Planner - U.S. Forest Service, National Outdoor Conference, etc.

2. Identify and train key leadership personnel to direct the above activities.

3. Coordinate the implementation process regionally (North, Central, South, Metro) in cooperation with other interested agencies and groups.

4. Develop a composite listing of Minnesota school districts' record of environmental education involvement.

5. Provide continuous information and feedback to interested clientele via all available communications methods, i.e., UPDATE, EARTH JOURNAL, etc.

Goal #4

To facilitate, coordinate and/or manage evaluation procedures that will result in improved educational programs.

Activities:

1. Develop basic environmental education evaluation instruments to measure the effectiveness and impact of the aforementioned activities.

2. Direct future efforts in a manner consistent with the measurable evaluation data.

3. Provide the results and information to interested clientele.

Goal #5:

To continue to assess, plan, implement and evaluate environmental education curriculum materials for the elementary and secondary schools in Minnesota.

1. To coordinate the planning and implementing of new and revised environmental education materials with supporting agencies, schools and individuals.

2. To provide new environmental education materials to all Minnesota schools and educators taking part in the program.

Activities:

1. Distribute 2,500 copies of the "Environmental Education Resources Manual" to Minnesota school district librarians/ media specialists.

2. Publish and field-test 1,000 copies each of the three secondary education environmental education curriculum packages.

   - a. Outdoor/Physical Education
   - b. Consumer Education
   - c. Social Studies/Science

3. Publish and field test copies of the Environmental Traffic Safety materials.

4. Field test, evaluate, revise and publish copies of "Minnesota's Wild Edible Foods".

5. Distribute all published curriculum materials to participating school districts and buildings throughout Minnesota.

Update on Minnesota Environmental Education Board

The Minnesota State Plan for Environmental Education was first published in the fall of 1972 in preparation for the 1973 legislative session. It was written and disseminated under the auspices of the Minnesota Environmental Education Council (MEEC), created in August of 1971 by Governor Wendell Anderson's executive order no. 6. In the spring of 1973, MEEC was established statutorily by Chapter 558 of the Minnesota State Legislature and appropriated $100,000 for the biennium.

The Council's enabling legislation permanently established a 26-member state organization and a system of 13 regional environmental education councils (REECs), one located within the boundaries of each of the state's regional development commissions. Members of both the state and the 12-member regional groups are all volunteers and all appointed by the Governor. Hired to serve as regional coordinator to the 13 councils was Pamela Landers, whose job description called for facilitating the work of the REECs by: 1) helping them to identify environmental problems in their own areas, 2) assisting in the development of plans which would best meet the educational needs of those environmental problems, and 3) implementing those plans via successful programs, workshops, seminars, projects, etc.

During the 1975 legislative session, MEEC and the REECs received a biennium appropriation of $325,000 and were officially designated boards rather than councils. The increased funding made possible the hiring of three additional regional coordinators to team with Landers in facilitating environmental education at the regional level. They are Carmen Borgerding, Charles Gibilisco and John Satterlee. Although budget capabilities are not great in terms of actual program monies available, there is much optimism about the potential of having four full-time professionals working in the field.

The state board continues to be staffed by Robert Kimball, executive director, and Karen Loechler, assistant director. Offices are at 647 Capitol Square Building, 550 Cedar Street, St. Paul, Minnesota 55101; (612) 296-4078.

The Minnesota State Plan (which many viewed more as a plan for a plan) is currently being rewritten. Revision plans call for the 13 regional boards and the state board to specify their individual goals and objectives for the coming year. The format will probably be a loose-leaf notebook allowing for continual updating and revision.

Greatest strength of Minnesota's organizational structure seems to be two-fold: 1) providing a regional approach to environmental problems in a state with extremely diverse ecological characteristics and concerns, and 2) providing broad representation to the varied interests of Minnesotans by having legislation which demands that members come from all segments of society--business and industry, labor, higher education, voluntary organizations, K-12 public schools, governmental agencies and regional development commissions.

Currently, the greatest problem area is one of persuading the Governor's Office to attach adequate priority to environmental education efforts to quickly and efficiently fill vacancies on the state and regional boards. With 169 different positions, that will undoubtedly be a recurring problem.

Environmental Conservation Library

Environmental Conservation Library (ECOL), Minneapolis Public Library and Information Center, 300 Nicollet Mall, Minneapolis, Minnesota 55401; (612) 372-6609. Librarian: Julia W. Copeland; Environmental Education Specialist: Jo Ann Musumeci.

The Environmental Conservation Library is an environmental information center for the state of Minnesota. Its collection includes popular and scholarly books, periodicals, newsletters, pamphlets, government documents, curricula, directories, tapes, posters, indexes, hearing transcripts, laws, and environmental impact statements. The subjects covered include natural resources, environmental policy, pollution, energy resources, conservation, ecology, environmental law, environmental education, and many others. Special emphasis is placed on information about Minnesota and surrounding areas.

The entire program is environmental education in its broadest sense. It is based on the conviction that citizen involvement in decision-making must be based on an understanding of the environmental implications of all of their actions, and this understanding will come from complete and readily accessible information. Some projects relate specifically to more formal environmental education programs. These include a separate curriculum collection, numerous special bibliographies developed especially for teachers, and ECOL's unique environmental education packets.

The packet project was begun with a grant under P.L. 91-516 in 1972. Aimed at students in grades 4-9 and their teachers and librarians, the packets include materials in many forms from many sources, on general environmental topics. They form "mini-libraries" of information for classes and individuals. Packets are loaned by mail to anyone in the state.

ECOL publishes a quarterly newsletter, ECOL News, which is free to residents of Minnesota.

Minnesota Environmental Sciences Foundation, Inc.

The Minnesota Environmental Sciences Foundation had its origins in the establishment of the Environmental Science Center. This project was funded under the Title III Act in Golden Valley, July 1967 through June 30, 1970. During that period the Environmental Science Center conducted workshops which emphasized programs for elementary teachers. Curriculum materials were designed to meet the specific needs of teachers at that time, and these materials became the basis for publications. Twenty-four of these titles are currently published by the National Wildlife Federation in Washington, D.C. Other materials have been continuously distributed by MESFI internationally.

In 1968 and 1969, negotiations were initiated with the Minnesota Environmental Sciences Foundation, which was a private, nonprofit conservation foundation, in order to continue the work of the Environmental Science Center at the end of federal funding. In 1969 MESFI was chartered as a nonprofit, private foundation, and the Environmental Science Center became its educational branch.

The original Title III grant terminated in 1970. A second grant, based on earlier work, the Community Environmental Studies Program, was funded for the period 1970 through 1973. This grant to the Golden Valley School District 275 was staffed by personnel from the original Title III project.

In addition to the Community Studies program (funded under Section 306, Title III), the Foundation also received a Career Education Grant which it conducted in cooperation with the Robbinsdale, Minnesota School District. This grant focused primarily upon elementary and secondary teacher awareness of environmental career opportunities.

Also during this time, the Environmental Science Center functioned on a series of grants from the Office of Environmental Education. These were specifically designed to conduct additional workshops and to expand the area of environmental site planning. In 1974-75, the Foundation also conducted a grant for the Office of Environmental Education to work specifically with citizens groups which were attempting to resolve environmental issues that were current priorities in each locality.

During the eight years of the Environmental Science Center/ Environmental Sciences Foundation, more than 70,000 teachers and citizens have participated in its programs. More than 300 schools and nature centers have received consultation services on planning and implementing environmental learning sites.

The Foundation currently is working on a contract with the National Park Service developing a study of the correlates between natural communities and human communities. Our curriculum materials are still distributed internationally and our current mailing list is about 7,000.

The Foundation is funded in a variety of ways. It receives money from outright donations, grants from charitable organizations to do special projects, at-cost contracts with private business, industry, groups, agencies, and institutions.

Cooperative Efforts with Department of Natural Resources

The 1969 Environmental Education Act placed a specific mandate upon the Department of Natural Resources (DNR) and The Department of Education (D.E.). That mandate stated that a kindergarten through twelfth grade environmental conservation education curriculum was to be developed and implemented throughout the Minnesota public schools.

In July 1969, the DNR hired an Environmental Education Consultant, Roger Grosslein, to administer the DNR's education program. John Miller was hired in November 1969 as the D.E.'s Environmental Education Consultant.

Decisions such as program objectives, determining criteria for the development of curriculum materials and implementation schemes were determined by a joint steering committee made up of representatives from both departments.

Early in 1970 the Environmental Science Center (now the Minnesota Environmental Sciences Foundation, Inc.) was contracted by the D.E. to develop the first K-12 prototype environmental education materials for Minnesota. The overall direction for the development of the environmental education materials was the main responsibility of the D.E. The DNR assisted and provided direction to the Science Center staff.

An advisory task force made up of a diverse group of people representing many different interests was formed in December 1970. This group worked with the two departments in the early development stages of the program. Because of the broad nature of environmental education it was obvious that the task was much larger in scope than either of the departments could handle. Based on the need for a comprehensive Minnesota State Plan, more citizen involvement and adult education the "Minnesota Environmental Education Council" (MEEC) was formed in 1971, thereby taking the place of the advisory task force. Presently there are thirteen regional councils corresponding to the Governor's Economic Regions.

In addition to the development of a Minnesota State Plan the MEEC was created to provide coordination and support for statewide environmental education efforts among and between agencies, groups and individuals. Minnesota presently is the only state with a regional structure to implement the Minnesota State Plan.

The first prototype materials were trial-tested in twelve pilot schools geographically distributed throughout the state during the 1970-1971 school year. Based on feedback and evaluations from teachers and students 30 of the original teaching activities were selected, revised and repackaged into colorful plastic folders. These first materials were for kindergarten through sixth grade and were called the Minnesota State Environmental Education Materials. Each individual activity was called a mini-unit. A mini-unit is defined as a short teaching activity generally ranging from one hour in length up to five hours encompassing a single concept and containing all teacher and student information and procedures to complete the activities. The development of the secondary materials was postponed because of a very poor and negative reaction on the part of the secondary teachers.

Upon completion of the 30 mini-units the DNR began to develop audio-visual support materials in the form of 16 mm color films, slide and filmstrip presentations with cassette and reel to reel sound. The A.V. materials were designed to complement the mini-units. The development proved to be very complicated and time consuming. The materials received their widest use and distribution during 1974 when a special environmental education library was set up in the Bureau of Information and Education and an advertising brochure was made available to the schools.

Other supplementary support materials were developed during the program's brief six-year history:

Beaver Story Webs and Wonders Learning to Live	These three publications are teaching activities available to Minnesota teachers on request - Date of development - 1971.

Environmental Value Action Cards - Developed for the D.E. in March 1973. These unique activity cards were designed especially for grades K-3. DNR will use these cards in its in-service workshops. Cards available from Dick Clark, Science Consultant in D.E.

Guide to Minnesota Environmental Education Areas. This guide, now out of print, described available environmental education sites throughout the state - what facilities were available and who to contact for site use. Developed in 1972.

Color Minnesota. Minnesota's own coloring book designed for use by second, third and fourth grades was developed in 1974 and is due for revision in 1975. The coloring book has been received very well across the State and is a useful teaching tool for teachers.

Color Posters - a series of Les Blacklock photographs were made into colorful posters and used to promote the Site Assistance program in 1974, throughout the State. A series of hunting posters will go out prior to hunting season, 1975.

During the summer of 1971 the D.E. contracted with a group of Albert Lea teachers to design a special workshop model to in-service the 30 mini-units with Minnesota teachers. Approximately fifty teams, each consisting of a DNR resource manager, a teacher and a higher education representative, were trained to provide teachers an opportunity to experience three of the 30 units. The titles of the three units were: "How many ways to say litter", "Fire and Values", and "Fingerprinting trees and bushes". These first workshops were called - "foresite".

In the spring of 1971 Bill Schmidt, District Forester from Faribault, was given a special assignment with emphasis on the environmental education program. Bill offically became part of the Bureau of Information and Education in January 1974. His main function is to direct the site assistance programs and the teacher education programs.

The DNR began work on ten additional mini-units in 1972. There was an expressed need by legislators, resource managers and teachers for educational materials that dealt directly with natural resource problems. All 11 new units (housed in green folders) deal with natural resource topics and require some outdoor experience.

The program was and will remain flexible, always able to change and improve with new information. Because of an increasing trend and desire on the part of schools to begin to use the outdoor classroom, the DNR in 1973 initiated a new program designed to help students and teachers utilize the outdoor classroom. In addition there was a growing dissatisfaction on the part of resource managers with the "foresite" model. The basic reason for dissatisfaction was that the original workshop design did not give either the DNR resource manager or the higher education representative a significant role. The resource manager many times ended up doing teachers' duties and not fulfilling their role as managers.

DNR's early attempts to encourage schools to use the outdoor classroom and to begin to tie their curriculum to the outdoors was unsuccessful. The first printed site assistance booklet was called the Environmental Land Resource Assessment (E.L.R.A.) The resource managers using ELRA found it to be too complicated to use with teachers. Based on that evaluation a new effort began in November 1973, Pathways to the Outdoor Classrooms, a current publication that launched the DNR's latest successful effort called the School Site Assistance Program. Approximately 45 resource managers were introduced to the first site assistance training model in March 1974.

Another phase of DNR's program involves teacher education. A new workshop model called "Wilderness Meal" was developed in 1974 for grades 5-8. The new model stressed the Wilderness Ethic. A handful of teachers were first trained in the fall of 1974.

In response to a very strong trend in schools toward life-time sports, a new workshop model called "Orienteering" was developed and trial tested in the spring of 1975. The workshop will complement existing physical education Outdoor Adventure programs as well as provide activities for math and social studies teachers in the secondary schools.

Finally, a workshop was designed in summer 1975 to provide elementary and junior high teachers with a general introduction to the mini-units and provide strategies for teachers to incorporate or adopt the mini-units into their present teaching programs.

The development of secondary units began in the fall of 1974. Using a Bush Foundation Grant, the D.E., DNR and Minnesota Environmental Science Foundation Inc. developed and trial tested series of units. Some materials were readied for school use during the 1975-1976 school year, while others will require trial testing.

The original 30 mini-units were delivered to approximately 200 school districts from 1971-1973. In 1974 additional mini-units were printed and revised. Simultaneously, enough of the 10 new units were printed to deliver to the original school districts already owning 30 mini-units. Three hundred additional sets containing 40 mini-units were printed.

New schools receiving in-service programs will receive a complete set of 40 mini-units. The foresite model will probably be phased out of existence after the fall of 1975. All further distribution of mini-units will be carried out by DNR through its teacher education programs.

The Environmental Education program of DNR has done an excellent job in bringing a statewide message of environmental education to the school teachers of Minnesota. In fact many states, including Canada, have looked to Minnesota as an exemplary program. At the beginning there were no existing guidelines so the program grew and evolved as public needs were discovered. Of necessity, the materials developed and the use of resource personnel has been very general. In the eyes of some people the program did not meet the specific needs of DNR. What has been accomplished is the establishment of a credibility with the school system that did not exist before and a delivery system unlike any other state in the Union. The door is open to work with the school systems. The time has come to look at the goals and objectives of DNR and begin to speak to the needs of DNR. Thr first step in achieving this goal will be through a department wide assessment to determine what should be accomplished.

The following statements are the beginning roots of a fresh look at the DNR education program of the future:

DEPARTMENT GOAL: "To achieve through an effective and efficient organization, optimum beneficial use of natural resources via planning, protection and development that is responsive to the public's needs and consistent with resource potential for the social and economic well being of both present and future generations."

STATE PLAN: "Environmental Education is a life-long process. It is a way of looking at life, fostering awareness of other life and of inter-relationships, learning to recognize the effects (both good and bad) man has on his physical and biological surroundings, and the responsibilities he must accept for the mere fact of his presence and his activities in the environment. It should enable him to make sound ecological decisions and foresee their consequences; to make value judgments, and act accordingly. Environmental Education encourages development of life values and a style of living which minimizes destruction and maximizes those relationships that enhance life. It is learning how to contribute to the quality of life, and fosters the constructive use, rather than exploitation, of the environment."

DNR EDUCATION MISSION: "To incorporate all related department programs and resources into an educational program that provides Minnesota's people a greater understanding, awareness and appreciation of the natural resources they own and use."

- John C. Miller
Environmental Education Program Coordinator
State Department of Education
644 Capitol Square Building
St. Paul, Minnesota 55101
(612) 296-4069

November 1975

MISSISSIPPI

On May 11, 1967 the Mississippi Conservation Education Advisory Council was established by a meeting called at the request of Mr. J. M. Tubb, at that time State Superintendent of Education. The volunteer members attending the meeting were educators, representatives of various natural resource agencies and associations, and individuals interested in conservation.

The organization's stated belief was and is that the welfare of the citizens of our state and country depends upon the development, wise use and protection of our natural resources. The Council bases its existence upon the need for conservation education as a basic part of the general education program.

A short time after its establishment in 1967, the Council recommended that the position of Environmental Education Consultant be established in the State Department of Education. The primary responsibility of that post would be to work with individual schools and others in promoting the teaching of conservation education at all levels and that a bibliography identifying conservation people, resources and materials be developed. This bibliography could be prepared by resource-use agencies and used by educators.

In 1970 the State Department of Education established the position of Environmental Education Consultant and Assistant Coordinator of NDEA Title III. To achieve its goals the Mississippi Conservation Education Advisory Council works cooperatively with the State Department of Education through the Environmental Consultant in the Division of Instructional Services as an advisory body in conservation education matters.

The development of a state plan for environmental education was initiated by the Council in November, 1971. At the present time the State Plan is completed in its draft form and efforts are in progress to refine the plan and identify means of effectively implementing that plan statewide at local levels.

Since the establishment of the Mississippi Conservation Education Advisory Council and the post of Environmental Consultant in the State Department of Education among its other contributions the Council has been highly successful in promoting teacher conservation workshops throughout the state. At this time, four such workshops are conducted during the summer months with various resource-use agencies cooperating with the University of Mississippi, Mississippi State University, and Delta State University in providing facilities, resources and highly qualified facilitators and instructors. Selection of educators to participate and efforts to coordinate these workshops are responsibilities of the State Department of Education's Environmental Education Consultant. Educators who participate receive graduate or undergraduate credit for successful completion of the programs through the participating institutions of higher learning.

Progress has also been made in helping students who participate in analogous activities to receive high school credit for their work in conservation education.

Efforts are in progress to implement the State Plan at regional levels throughout the entire state through the cooperative efforts of the State Department of Education, the University of Mississippi, and all junior colleges in the state with the assistance of funds secured by the University of Mississippi through Title I of the Higher Education Act.

In general the Mississippi Conservation Education Advisory Council is committed to promoting all efforts related to developing positive attitudes towards man's relationship to his environment through all means at its disposal.

Publications include Understanding Our Environment; A Bibliography of Free and Inexpensive Materials compiled by Bibliography Committee, Mississippi Conservation Education Advisory Council and Educational Media Services, Division of Instruction, Mississippi Department of Education.

Environmental education activities in Mississippi's elementary and secondary schools are manifold and diverse. Funding for activities is primarily at the local level. However, there is one ESEA Title III funded project in the state. Higher education is becoming more involved by increasing course offerings and establishing degree programs in areas related ot the environment. At the present time there is no mandatory legislation in the area of environmental education except for Section 49-19-17 of Title 49 of the Mississippi School Code which deals briefly with the teaching of forestry in schools and colleges. Although there are handicaps caused by the absence of legal mandate, we feel that the many positive activities going on in our state reflect the integrity of Mississippians and their willingness to address themselves to today's vital areas of concern.

- Michael G. Carothers
Science and Environmental Education Consultant
State Department of Education
Division of Instruction
Box 711
Jackson, Mississippi 39205
(601) 354-6965

July 1975

MISSOURI

The Missouri State Plan for Environmental Education is almost in final draft form and will be a joint publication of the Missouri Departments of Natural Resources, Conservation, and Elementary and Secondary Education. Printing is expected about December 15, 1975.

Environmental and Community Health is a main concept in the Missouri Comprehensive Health Instruction Program: K-3, 4-6, 7-9, and 10-12.

Our approach is to integrate environmental concepts into all aspects of the curriculum, giving positive consideration to developmental needs of youth in respect to the total environment.

We are recommending to Governor Bond that one state department be assigned the specific responsibility of coordinating matters related to environmental problems and education.

State agencies are getting together to jointly analyze environmental problems such as the "energy crisis." We found out that valid and reliable information is difficult to find or determine. Biases are clouding the issues and decisions are not easy to make.

Missouri schools have geen given positive direction as to how to conserve on fuel/energy and cut overhead costs. Commissioner of Education Arthur L. Mallory has given leadership to establish sound environmental practices by Missouri schools.

The responsibility of coordinating Environmental Education within the Missouri Department of Elementary and Secondary Education as it pertains to school instructional programs has recently been assigned to the undersigned.

- Robert M. Taylor, Ed. D., Director
Health, Physical Education, and Safety
State Department of Education
Division of Public Schools
Jefferson Building
P.O. Box 480
Jefferson City, Missouri 65101
(314) 751-2664 or 4520

October 1975

MONTANA

It seems that it is time to become more objective in our approach to environmental education. The philosophies, models and guidelines for environmental education have already been written, rewritten and are currently being implemented. It is now time to transform philosophies into meaningful plans of educational action. It seems that there are two types of concerns in education: (1) proximate concerns are activities related to the development of philosophies, ideologies or model of education, and (2) ultimate concerns are those that deal with the effectiveness these philosophies have on students. In the latter instance we are not only concerned with our perceptions of how important something is, but also with how the students perceive as a result of having been exposed to the philosophy. In Montana then, our ultimate concern is to currently deal with the following fundamental questions: (1) Are the philosophies, models and guidelines for environmental education pragmatic? (2) Do they work at the level of the student? (3) To what degree do they work at the level of the student? (4) How can environmental education be more effectively implemented at the level of the student?

In order to focus on these ultimate concerns we need to concentrate on our current model of environmental education. The model adopted by this office is in close accordance with parameters of environmental education outlined by U.S.O.E. It has the following dimensions:

1. It is a humanistic model of education, i.e. student centered.

2. It is cognitive, psychomotor and affective, not just cognitive, e.g. man is not seen as a "tabula rosa", a hollow receptacle into which one pours facts and figures, but also a biological entity with emotions, beliefs, attitudes, values and perceptions.

3. It is problem centered, e.g. major cognitive concerns are not only with knowledge but with problem solving abilities as well. A major theme is to educate, not indoctrinate. Education, in this instance, demands that students be exposed to all sides of an issue and allowed to make an independent choice on the basis of the logic and evidence, rather than adhere to a testimonial model of education in which students seldom question the authoritative testimony of the instructor.

4. It is activity oriented, e.g. students are actively involved in the decision-making process. Perception is developed through experience and experience is seen as a necessary prerequisite to cognitive, affective and psychomotor development.

5. The curriculum is relevant and futuristic, e.g. the school is seen as an extension of the community and the community as an extension of the school. Further, en-environmentally related topics are not seen as isolated subject matter but are more suited to interdisciplinary teaching and instruction. Environmental education is not seen as an end in itself (a separate subject) but as a means to an end, a means of developing a citizenry capble of coping with problems of the environment, i.e. biophysical, socio-cultural and psychobiological. This suggests that not only is the curriculum interdisciplinary or multidisciplinary, but that concepts, perceptions, and attitudinal concerns be articulated vertically through the curriculum in a manner that relates to the psychological development of students. Finally, such a curriculum also demands that pedagogy become a science. Those factors that concern themselves with horizontal organization of the curriculum, e.g. grouping, scheduling, etc. should be based on the intrinsic needs of students and not entirely on extrinsic, perceived needs of administrators, e.g. buildings, budgets and buses.

6. Education is not seen as an end in itself (a product) but rather as a means to an end (a process). Education is an integral part of life, rather than a product that ends in so much memorization, regurgitation, compartmentalization, departmentalization, and diplomas, e.g. it is interdisciplinary and implies that ecological principles be applied to human ecosystems as well as biophysical ecosystems, e.g. integrated interdependent cooperative relationships between and among the people (lay citizenry as well as the professionals).

First, it seems likely that most everyone would agree with such a model for environmental education. It is at best, difficult to argue against.

The problem in Montana has been to develop some concise understanding of environmental education that will facilitate a coordinated, consistent model of environmental education. In this regards, it is important to clarify our position relative to public education in the state of Montana. We are an educational agency with political responsibilities; our primary responsibilities include: (1) transforming the needs of the citizenry of Montana into some kind of educational reality and (2) serving public schools or facilitating ongoing environmental education programs in accordance with the process model outlined above. In regard to environmental education, we are attempting to meet both obligations in the following manner:

I. Response to Our Constituency

A. We have responded to the citizenry, both lay and professional through a statewide needs assessment. The assessment process has resulted in identifying fifteen statewide goals for Montana education. One goal deals specifically with environment, and others specifically support environmental education. The identified goals are what the citizens of Montana expect schools to teach and students to learn. We are currently developing criterion and norm-referenced measures that assess the degree to which students are achieving knowledge, problem solving skills, attitudes and perceptions in the goal area "environment". Further, the assessment measures are designed specifically to tap three dimensions of the environment, not one. We are concerned that students not only develop understanding of biophysical environmental concerns but socio-cultural and psychobiological as well.

In addition, the assessment measures will not only give us indices of student behavior in the cognitive domain but in the affective and psychomotor domains as well. Schools can then begin to utilize this information for program planning and evaluation.

We have also developed a process model entitled Basic Quality Education which develops and crystallizes an educational philosophy that may be essential to implementing the environmental education model previously outlined. We utilize the model to identify the kinds of educational conditions (resources) that will result in student experiences or outcomes described in the dimensions of the Basic Quality Education. We are basically humanist in Montana in terms of educational philosophy and are attempting to develop some consistency throughout the educational community in terms of identifying the kinds of means it will take to permit us to achieve that end.

B. We have in addition attempted to specifically respond to our professional constituency through the development of an Environmental Education Handbook, an anthology of environmental education units designed by teachers for teachers. This handbook is currently being evaluated by our office and will be improved and updated.

C. Further examples of our concern and involvement with environmental educators are summarized below:

1. Sponsored and participated in two statewide environmental education planning conferences (1970, 1974).

2. Developing a statewide environmental education advisory council (1975-76). The council will be comprised of educators (public, private and higher education) resource agencies (Forest Service, BLM, Park Service) state governmental agencies (Department of Conservation and Natural Resources, Environmental Quality Council, Governor's Energy Council) Business

and Industry and Environmental groups (Sierra Club, Wilderness Society, Northern Rocky Mountain Plains Council, etc.)

3. Development of an environmental education advisory council concerned with identifying desirable student environmental education outcomes so that measures can be developed to assess where students are in relation to where students ought to be in terms of knowledge, attitudes and perceptions about complex environmental concerns.

II. Facilitating Environmental Education Programs Through Service to Schools

A. Financing and providing environmental education consultation services in the area of curriculum planning and evaluation have been provided to the following school districts during 1974-75:

1. Whitefish School District
2. Missoula Elementary and Missoula County High School
3. Kalispell Public Schools
4. Libby Public Schools
5. Polson Public Schools
6. Hamilton Public Schools
7. Stevensville Public Schools
8. Helena Public Schools
9. Beaverhead County Public Schools
10. Butte Public Schools
11. Livingston Public Schools
12. Great Falls Public Schools
13. Havre Public Schools
14. Glasgow Public Schools
15. Billings Public Schools
16. Hardin Public Schools
17. Deer Lodge Public Schools
18. Anaconda Public Schools
19. Twin Bridges Public Schools
20. Lewistown Public Schools

The Office of the Superintendent also has provided several environmental education workshop endeavors from 1973-1975:

1. Conducted stateside workshops held at five regional sites for teachers and administrators with emphasis on helping teachers to develop classroom environmental problem solving skills and a variety of activity centered curriculum activities, e.g. game simulation, field trips, etc. (1973).

2. Conducted statewide Office of the Superintendent of Public Instruction workshops held at seven school sites for teachers and administrators with emphasis on

affective (value clarification) and energy curriculum as well as curriculum labs for greater exposure to recent environmental education curriculum materials and resources (1974).

3. Sponsored twenty-two environmental education workshops across the state on implementing interdisciplinary environmental education (1974).

4. Sponsored a statewide workshop on energy and implementing interdisciplinary energy education (1975).

5. Currently planning a new series of environmental education workshops developed by teachers for teachers (April 1976).

C. Program Evaluation

1. Many of the environmental education endeavors in the state of Montana have been evaluated and the results have been made available to schools.

2. Program planning and evaluation. As indicated earlier, we are approaching environmental education from a goal based planning approach. Program planning is related to student level assessment information. Evaluation then becomes an integral part of program planning. Evaluation is designed to determine the degree to which students are achienving the goals developed for environmental education by the citizenry of Montana.

D. Legislation

1. We have successfully influenced the legislature to sponsor an environmental education consultant. The consultant will divide his time between environmental education and social studies, and will begin his responsibilities in January 1976. The position will be filled by Edward Eschler.

2. Last year we were instrumental in vetoing a bill aimed at mandating environmental education in the state of Montana. We are opposed to legislated curriculum mandates in Montana for many obvious reasons. Further, the legislation (HB 844) was far too ambiguous to determine if it did in fact represent Montana's current model for environmental education. It was promoted by curriculum zealots who were interested in making environmental education a separate course in the curriculum. Recently, the legislature of the state of Montana passed a bill that relinquishes their power to mandate curriculum without the consent of the Board of Public Education.

3. During the past few years the Office of the Superintendent of Public Instruction has allocated approximately $500,000 toward educational services and programs in environmental education. This is mentioned because it demonstrates a level of commitment toward implementation of environmental education in Montana, sometimes referred to as "putting your money where your mouth is."

III. Professional State and Federal Liason Activities

A. Every effort is maintained in the office to disseminate environmental education materials. The Office of the Superintendent of Public Instruction in Montana has developed a contract with the Board of Cooperative Educational Services in an effort to provide updated curriculum information to administrators and teachers. In addition, we have gathered information through a centralized office library dealing with such topics as energy conservation, affective education, developing environmental education or multi-disciplinary curriculum, and sundry teacher environmental education classroom activities. These materials are utilized by our consultants and are disseminated to school officials or teachers on request.

B. Members of the staff have participated in a number of in-service activities designed specifically to increase understandings of interdisciplinary or multidisciplinary education.

C. Virtually every college in the state offers courses in environmental education. The University of Montana at Missoula and Eastern Montana College in Billings offer undergraduate minors in environmental education. Both also offer master's degrees in environmental education.

D. Our office is currently developing an environmental education council that will include membership from state and federal agencies in the state concerned with environmental education. Included on the council will be U. S. Park Service, federal and state Fish and Game officials, Bureau of Land Management, State Department of Conservation and Natural Resources, state Environmental Quality Council, and others.

It seems imperative at this point that our position relative to the philosophy and model of environmental education be clear. Our office endorses an interdisciplinary or multidisciplinary model of environmental education. We do not perceive environmental education as an end in itself (a discipline), but rather an educational process (a means to an end). In this regard, we encourage that environmental education not be the vehicle for educating, but the process by which students are educated. Environmental education then must become an integral part of every subject---not just science or outdoor education

---but social studies, language arts, physical education, art, math, government, home economics, or for that matter any subject that exists in the curriculum.

A second major point can be made relative to our role in implementing environmental education in Montana schools. We will continue to strive to serve the educational needs of the citizenry of Montana. At this point in time the citizens of Montana expect schools to teach and students to learn about the complex problems of the environment and to develop coping strategies that will enable them to resolve these problems as future citizens. In this regard, we have developed an assessment process that will help the citizens and educators to determine to what degree our schools have accomplished this task. These data will be utilized by schools for program planning and evaluation so that we can improve the process.

Our office, however, will oppose attempts to mandate curriculum under the guise of environmental education, as recently indicated by the Montana Board of Public Education. Finally, our position as it relates to providing services to schools toward implementing environmental education will continue as it has in the past to meet the needs of public schools as best our resources will allow.

At this point, and into the future, we are much more concerned with the ultimate questions posed earlier---Are the philosophies, models, and guidelines posed by this office for environmental education pragmatic? Do they work at the level of the student? To what degree do they work? How can they be implemented more effectively? It should be obvious that no position can be taken relative to these questions until we have more evidence. We do, however, take a strong position that these are critical questions which must be answered if we are to meet the future needs of society in regard to environmental concerns. Further, we suggest that solutions are long-range if we are to achieve our state goals. There is no doubt in our minds that we will need assistance of other state agencies, educators at all levels, and citizens, if we are to meet the challenge of environmental education. Our suggestions for emerging problems and potential solutions are outlined below:

A. Are the philosophies, guidelines and model for environmental education pragmatic?

On the basis of the evidence we have gathered, it would seem that for the most part the model for environmental education is working. Confusion exists, however, among some professionals who still perceive environmental education to be a separate academic discipline, In a large number of schools, the science class has become a vehicle for teaching environmental education. However, it should be pointed out that environmental education issues have not been confined to science programs. In fact, they have been integrated into social studies, history, English, physical education, art and in some instances virtually every course taught in the elementary school. We do have evidence to suggest however, that in some instances, there is not good vertical articulation of environmental education (cognitive or affective) concepts on a 1-12 grade level basis. This problem is primarily related to the current curriculum structure that exists in most of our schools.

Subject centered curriculum does not enhance team teaching or the pooling of instructional resources. Most teachers are isolated entities and have little opportunity to exchange ideas or professional talents. This problem could be eliminated if administrators could either change traditional subject centered scheduling to a more flexible scheduling system, e.g. modular, or provide more opportunities for teachers to plan and work together. A major point to recognize however, is that simply because a particular course of subject matter in a curriculum is not called environmental education does not mean that environmental education is not being taught. Therefore, we need to determine to a greater extent just what is being taught before we suggest alternatives.

If other educational agencies, particularly higher education, could assist us by disseminating curricular materials and provide more updated inservice training through workshops and course work, it seems likely that we could begin to improve the existing curricula.

B. Does the environmental education model work at the level of the student?

It seems safe to suggest that the model does work but not to the degree it is intended to work. The major problems are: (1) Students do not have enough opportunity to develop problem solving skills. They become aware of the problem but many do not have the skills necessary to seek alternative solutions. (2) Students need much more exposure to affective concerns particularly in the area of value clarification. Students must become more aware of their own value systems before they can begin to identify and select from alternative lifestyles. (3) Students would benefit from more exposure and experience with relevant and ongoing community problems. There are two extremely important aspects to extending the learning situation into the community, (a) it provides students with a "first hand" experience which makes learning a "part of life" and (b) it improves their perception and assists them in understanding basic differences between man-made and natural change.

Teacher and administrative re-education will help us to solve these problems. For example, teachers need more exposure to classroom techniques that enhance student problem-solving ability and affective development. The workshops we have offered in these areas were heavily attended and favorably evaluated. Further, our program evaluations suggest that even third grade children have feelings about environmental degradation. Unfortunately however, most evaluations suggest that schools are reluctant to provide or evaluate affective instruction. Finally, we also have some evidence to suggest that some schools are reluctant to provide children an opportunity to explore the pro and con of an issue. Opportunities for field trip experiences are not being provided because some schools feel coerced by community pressures. These are local problems that schools must deal with and even though we encourage schools to educate and not indoctrinate, we cannot usurp the local control of schools.

C. To what degree is the model working at the level of the student?

We simply do not have enough baseline data to be able to answer this question at this time. We have evidence to suggest that students are becoming more aware of the problem but have nothing to compare "degree of success" with. If schools were more goal oriented and established local criterion-referenced norms for their students, we would be in a better position to deal with this issue. We are however, also seeking solutions to this problem through our needs assessment program. Those schools who choose to participate in the program will be in an excellent position to answer this question for themselves. Our role will be to assist schools in assessing what cognitions, perceptions and attitudes students currently have in relation to what the local school thinks is reasonable to expect based on the characteristics of the students and resources of the district.

D. How can the environmental education model be more effectively implemented at the level of the student?

The complexity of the problem of educating a citizenry capable of dealing with the complex problems of the environment can only be accomplished if we as educators are willing to exemplify the kind of behavior we expect of our students. The successful implementation of environmental education demands that ecological principles be applied to human ecosystems (societal institutions) as well as the biophysical environment. The most fundamental principle of ecology is that any system demands integrated interdependent cooperation between and among its parts (subsystem) for the efficient operation of the whole. The interdisciplinary problem of bringing people together, who have never met before, to solve educational problems is a critical part of the solution.

If leadership is not provided, if for example curriculum development falls into the hands of zealots and does not reflect the three-dimensional needs of educational institutions, i.e. students, teachers and administrators, we will not only fail to solve the problem but will contribute to it. To internalize these concepts, then, is to come to the realization that the environment of the school is as important as the biophysical environment. Out attitudes about ecology and the environment must be consistent with our behavior. In this regard, we welcome and encourage participation from all levels of the human community of Montana or the nation in helping us answer these questions in a cooperative effort to improve the total environment of man.

- Gary Hall
Finance, Planning and Evaluation Component
Office of the Superintendent of Public Instruction

December 1975

Note: As of January 1, 1976, responsibility for environmental education within OSPI will be assigned to:

Mr. Edward Eschler
Social Studies Consultant
Office of the Superintendent of Public Instruction
State Capitol Building
Helena, Montana 59601
(406) 449-2678

NEBRASKA

There is no environmental education state plan in Nebraska.

Nebraska has no environmental education legislation, past or present. Unless a problem should develop, none is anticipated.

Environmental education certification standards have been set up.

Nebraska has no full-time consultant in environmental education. Responsibility for environmental education is assigned to:

Dr. Roger E. Macklem
Science Consultant
Nebraska Department of Education
233 South 10th Street
Lincoln, Nebraska 68508
(402) 471-2476

There is no state advisory board for environmental education, per se. There is a State Advisory Board for Science.

Your Environment, a four-booklet series written by Nebraska Game and Parks, is available through Dr. Macklem's office.

No environmental education state programs are funded under ESEA, Title III, or P.L. 93-278.

Summer workshops and classes in environmental education are conducted at the University of Nebraska.

Interagency cooperation in environmental education efforts exists with the Game and Parks Commission and the Department of Environmental Control.

- Dr. Roger E. Macklem
Science Consultant
Nebraska Department of Education
233 South 10th Street
Lincoln, Nebraska 68508
(402) 471-2476

October 1975

NEVADA

State Plan for Environmental Education

The Nevada Advisory Committee for Environmental Education (NACEE) was created by the 1971 Nevada Legislature for the purpose of advising, supporting and coordinating environmental education in Nevada. NACEE interprets this responsibility to include all environmental education programs and activities in Nevada, formal and informal, and including those of the public and private schools, the universities and the various interested public and private organizations.

To carry out its responsibilities, NACEE will establish an office and operating arrangements with the State Department of Education and will develop and maintain cooperative programs with all appropriate agencies and organizations. The Environmental Education Consultant in the State Department of Education will serve as Executive Secretary to the NACEE.

The goal of NACEE is to insure quality environmental education opportunities for all citizens of Nevada. This goal is to be met through both formal and informal educational programs and activities and, insofar as possible, will utilize existing facilities, including natural areas, organizations and programs.

Functions of the Nevada Advisory Committee for Environmental Education

By law, the NACEE was created "for the general purposes of advising, supporting and coordinating environmental education programs in this State". In implementing this mandate, NACEE will attempt to carry out the following functions:

1. Development and maintenance of a cooperative system to coordinate and encourage sound and complementary environmental education policies and programs in the State Department of Education, the various school districts, and in public and private organizations that wish to participate. Such a system should include:

    a. Public school programs

    b. Programs for cooperating private and parochial schools

    c. Programs within the University of Nevada system, including but not limited to teacher training

    d. Teacher certification and in-service training

    e. Non-formal programs for youth and adults

    f. Use of outdoor education facilities and natural areas

g. Recommendations of specification providing for outdoor study areas at school sites.

2. Development and maintenance of a system for review and evaluation of existing and available programs, instructional materials and resources for use in environmental education programs.
3. Development and maintenance of a communications system among organizations and individuals concerned with environmental education.
4. Establish priorities to develop and/or implement environmental education programs, sites and faciltites.

Immediate Program Goals

Following are program goals for environmental education in Nevada:

1. Develop in-service teacher training in environmental education.
2. Review and evaluate available environmental education teaching materials and facilities.
3. Continue a program to develop needed teaching materials, facilities and natural study areas.

NACEE will attempt to develop an Environmental Education Advisory Committee in every county in Nevada.

Environmental Education Legislation

The Nevada Revised Statutes include the following Environmental Education Legislation:

389.110 Environmental education: Instruction in environmental protection, conservation of resources. Instruction concerning the preservation and protection of our environment, the principles of ecology and the principles of conservation of our natural and human resources shall be included in the curriculum of all elementary and secondary schools of the state.
(Added to NRS by 1971, 1186)

389.120 Environmental education: Counseling programs. All persons responsible for guidance and counseling programs in secondary schools shall provide students with information concerning careers and further education in the area of environmental quality.
(Added to NRS by 1971, 1186)

389.130 Environmental education: Outdoor education and camping programs.

1. Each school district shall investigate the feasibility of programs of outdoor environmental education and camping for its students.
2. Such investigations shall be coordinated with the Nevada advisory committee for environmental education and with the state department of education.

(Added to NRS by 1971, 1187)

396.515 Instruction in ecology, environmental protection; inclusion in teacher education program. Instruction in the university shall be given in the essentials of ecology and environmental protection. Such instruction shall be included in the teacher education program developed by the university.

(Added to NRS by 1971, 1187)

Teacher Certification in Environmental Education

Teacher certification regulations shall include provisions for certification in the area of environmental education.

Environmental Education Consultant

An Environmental Education Consultant is provided for by the Nevada Revised Statutes as follows: The state department of education shall provide leadership for the environmental education program by appointing an environmental education consultant, who shall be in the classified service of the state and an employee of the state department of education, whose responsibilities shall include but not be limited to the following:

1. Coordinating the efforts of the various desciplines within the educational system that are concerned with environmental education.

2. Developing and distributing instructional materials for use in environmental education.

3. Developing programs of in-service teacher training in environmental education.

4. Coordinating the efforts of private organizations, local school districts and governmental agencies that are concerned with environmental education.

Environmental Education Advisory Committee

The Nevada advisory committee for environmental education is created for the general purposes of advising, supporting and coordinating environmental education programs in this state.

1. The Committee shall be composed of seven members appointed by the governor:

    a. Two members shall each be a member of a conservation organization.

    b. One member shall be a representative of a board of trustees of a school district.

    c. One member shall be a representative of the University of Nevada System.

    d. One member shall be a person having special knowledge or experience and qualifications with respect to environmental education.

    e. Two members shall be representatives of the general public not otherwise identified with any of the above-enumerated categories.

2. Members shall initially be appointed as follows:

    a. One member each pursuant to paragraphs a,b, and e of sub-section 1 shall be appointed for a term of one year.

    b. All other members shall be appointed for terms of two years. Thereafter, all members shall be appointed for terms of two years.

3. The environmental education consultant as hired under NRS 388.595 shall serve as a nonvoting secretary of the committee.

4. The governor shall make every reasonable effort to give representation to different geographical areas of the state when he appoints committee members.

5. The committee members shall choose a member to serve as chairman.

6. A quorum of the committee shall be four members. (Added to NES by 1971, 1185)

Advisory Committee members are as follows:

Mr. Philip Gregory, Jr., Chairman, 6317 Clarice, Las Vegas, Nevada 89107

Mr. Jack Artz, Vice Chairman, Extension Range Specialist, Renewable Natural Resources, College of Agriculture, University of Nevada, Reno, Nevada 89507

Mrs. Ruth Armstrong, 1131 Sentinel Circle, Reno, Nevada 89502

Ms. Barbara M. Burford, Eldorado High School, 1139 N. Linn Lane, Las Vegas, Nevada 89110

Mrs. Mary Barnett, 2204 S. 17th Street, Las Vegas, Nevada 89105

Mrs. Bernice Moten, Dawson Building, Suite 234, 4055 Spencer Street, Las Vegas, Nevada 89109

Dr. Fred Ryser, 2155 Ives Avenue, Reno, Nevada 89503

Publications

The department assists in publishing a newsletter of the Nevada Environmental Education Council, Nevada Advisory Committee for Environmental Education, and Nevada Department of Education.

Exemplary Public School Activities in Environmental Education

Programs in Nevada are funded by the local school districts.

College and University Activities in Environmental Education

The University of Nevada - Reno, and the University of Nevada - Las Vegas, both have academic committees working on course offerings related to teacher certification and teacher preparation.

State Resource Agencies

State resource agencies and others are cooperating at this time on developing materials for classroom use for Nevada schools.

- Jack O'Leary, Consultant
Nevada Department of Education
Capitol Complex
400 West King Street
Carson City, Nevada 89710
(702) 882-7325

November 1975

NEW HAMPSHIRE

State Plan for Environmental Education

New Hampshire's Plan for Environmental Education was formulated by the Environmental Education Planning Council of New Hampshire between 1971-73. The Council consists of 20 members representing public and private education at all levels as well as certain environmental groups. It is sponsored by the State Department of Education, the New Hampshire College and University Council, the Cooperative Extension Service, the Society for the Protection of New Hampshire Forests, the Audubon Society of New Hampshire and the New Hampshire Charitable Fund and Affiliated Trusts.

The preparation and publication of the Plan was supported by grants from the Spaulding-Potter Charitable Trusts and P. L. 91-516. The Plan was complied by the Executive Secretary of the Planning Council and the Science Consultant of the State Department of Education together with the direct participation of the other members of the Council and 500 additional New Hampshire citizens. The Plan was published in three parts; a 1973 needs assessment report, a compendium of environmental education resources and programs, and a third volume entitled Environmental Education for New Hampshire: A Plan for Community Involvement.

In the introduction to this third volume, the Council sets forth its belief "that environment education for New Hampshire is most likely to be implemented, and that it will be most meaningful if it is implemented, at the local level." Thus, implementation of the Plan is the responsibility of local school districts and local communities. Since its publication, an increasing number of New Hampshire schools and communities have used the services of the members of the Council to assist them in such implementation. Activities have included conducting workshops, developing environmental study sites and assisting in the development of local school and community environmental education programs. The Council continues to meet as needed and its members are available upon request to assist all New Hampshire schools and communities.

Environmental Education Legislation

None.

Teacher Certification

The State Board of Education, in a Policy Statement relative to Environmental Education adopted on January 13, 1971, stated that "environmental education programs should make a deliberate effort to coordinate and involve all disciplines." Thus, if an individual is certified to teach in New Hampshire such certification covers the teaching of environmental education as it applies to their discipline. For example, a biology teacher could teach a unit or course on ecology, a social studies teacher could teach a unit or a course on the politics of pollution or the two of them might cooperate and teach one interdisciplinary course. At present, the demand for environmental supervisors in our state is negligible. As a result, the State Department of Education does not offer certification in this area.

State Contact

William B. Ewert, Consultant, Science Education, State Department of Education, 64 North Main Street, Concord, New Hampshire 03301; (603) 271-3293.

Environmental Education Advisory Boards

The Environmental Education Planning Council of New Hampshire serves as the Advisory Board relative to environmental education for both the State Board and State Department of Education. The Consultant, Science Education, is chairman of the Council. In addition, energy education has been recognized by the State Board as a priority goal for education in New Hampshire. An Energy Education Task Force, chaired by the Consultant, Science Education, has recently been formed.

Environmental Education Publications Available from the State Department of Education

1. Environmental Education for New Hampshire: A Plan for Community Involvement. New Hampshire's State Plan. Available from the Consultant, Science Education, or from the ERIC system (ED 103 224).

2. 1973 Needs Assessment Report issued as Addendum No. 1 to: Environmental Education for New Hampshire. Out of print. Available only from the ERIC system (ED 103 225).

3. Environmental Education Resources and Programs issued as Addendum No. 2 to: Environmental Education for New Hampshire. Available from the Consultant, Science Education, or from the ERIC system (ED 103 226).

4. Energy Conservation Materials Package. A reprint in one volume of four booklets prepared by the Interstate Energy Conservation Leadership Project. Topics covered are energy conservation in existing school facilities; district-level plans for energy conservation; energy conservation in the school curriculum; and energy conservation in school transportation systems. Available from the Consultant, Science Education.

Exemplary Public School Activities

1. ESEA, Title III. These funds have not been used to promote environmental education in New Hampshire.

2. P. L. 91-516. In addition to several mini-grants, two significant school projects have been funded in New Hampshire under the Environmental Education Act. These are:

    a. The Manchester West High School Environmental Studies Project headed by James Hall, Chairman, Science Department, West High School, Manchester 03102.

    b. The Environmental Education Implementation Program sponsored by the Regional Center for Educational Training, Hanover 03755. This project, directed by Allie Quinn, has supervised the implementation of environmental education in schools belonging to four New Hampshire and five Vermont supervisory unions.

3. Others

    a. Stratford Environmental Program funded by the Experimental School's Office of the National Institute of Education. Project Director: Dr. Richard Peters, Groveton Elementary School, Groveton 03582.

    b. Tilton School Water Pollution Project funded by the Federal Environmental Protection Agency. Contact: Richard Fabian, Tilton School, School Street, Tilton 03276.

    c. Keene High School, grades 9 and 10, environmental studies courses. Funded locally. Contact: Richard Tremblay, Chairman, Science Department, Keene High School, Keene 03431.

    d. Concord School Environmental Education Project. Originally funded by a grant from the Spaulding-Potter Charitable Trusts, this project is now funded locally. It is headed by New Hampshire's only full-time school environmental education coordinator, Edwina Czajkowski, Morrill School, 16 Runford Street, Concord 03301.

Anecdotal information about these and several other New Hampshire school based environmental programs is included in the publication Environmental Education Resources and Programs.

College and University Activities

All New Hampshire's colleges offer courses which cover various environmental concerns. Many of these are open to prospective teachers. The University of New Hampshire in Durham offers various environmental education courses through its Recreation Department and the Antioch Graduate School in Keene offers a Master's degree program in environmental education.

State Resource Agency Activities

Representatives of the various New Hampshire State Resource Agencies assist in running environmental education workshops and in setting up environmental study sites. These services are performed upon request and to the extent that manpower is available. In addition, two federal agencies, the White Mountain National Forest staff and the U.S.D.A. Soil Conservation Service, have done much to further environmental education in New Hampshire.

Other Activities

Historically, New Hampshire's private agencies have been the principal promoters of environmental education in the Granite State. Their activities include organizing workshops and institutes for teachers, providing consultant services and the management of several nature centers. Detailed information about the activities of New Hampshire's private agencies is contained in the publication Environmental Education Resources and Programs. These agencies are: the Society for the Protection of New Hampshire Forests; the Audubon Society of New Hampshire; the Squam Lakes Science Center; the Appalachian Mountain Club; and the Harris Foundation.

Other Information

1. Local conservation commissions found in practically all New Hampshire towns are mandated by the legislature to promote environmental education.

2. Funds from a local trust have recently been used to employ an environmental coordinator for the town of Walpole. This individual is David Blair, General Delivery, Walpole 03608.

3. Several New Hampshire school districts participate in school camping programs. Two facilities exist in New Hampshire for this purpose. They are the Otter Lake Conservation School, Camp Union, Greenfield 03047 and Nature's Classroom, Potter Place 03265.

4. The most dedicated worker for environmental education in New Hampshire during the past 25 years has been and continues to be Leslie Clark, Education Director, Society for the Protection of New Hampshire Forests, 5 South State Street, Concord 03301.

- William B. Ewert, Consultant
Science Education
State Department of Education
64 North Main Street
Concord, New Hampshire 03301
(603) 271-3293

November 1975

NEW JERSEY

State Plan Activities:

New Jersey has a state plan for elementary and secondary schools and a staff for Environmental Education. The staff consists of six members, three professionals and three secretaries. They carry out their activities under the State Department of Education and the New Jersey State Council for Environmental Education.

New Jersey was the first state in the nation to develop a state master plan for environmental education. At present, the state is involved in implementing the recommendations contained in the master plan.

New Jersey is concentrating its environmental education efforts in the following areas:

Curriculum: A computer-based K-12 environmental education program has been developed. The program consists of thirteen interdisciplinary Computer Based Resource Units (CBRUs) concerning such topics as Population, Energy/Society, Natural Resources, Industrial Growth and Economic Development, Case Studies, etc. Each resource unit contains objectives, content, activities, evaluation instruments, and resource suggestions. All units are available to the teachers of New Jersey. Two additional units related to the World Food Crisis and Marine Resources will be available after June 1976.

Teacher In-Service Training: An in-service training program in the use of CBRUs has been completed. Key personnel in all 600 school districts have been trained.

State Department of Education - Rutgers University Joint Environmental Education Project: The Project has sought to combine the efforts of the Graduate School of Education, Rutgers University, and the State Department of Education, Division of Curriculum and Instruction, into a Center for Environmental Education. The Center's activities include: developing programs of instruction in environmental education for elementary and secondary schools; providing on-site services in local schools; conduct research on the effectiveness of environmental education programs; maintain a library of instructional materials for educators' use in selecting materials appropriate to their particular classroom needs.

American Association for the Advancement of Science: The New Jersey State Council for Environmental Education is working with the AAAS in organizing a consortium of Regional Environmental Education Councils.

New Jersey Education Association: The NJEA is assisting in the state's efforts in the areas of curriculum materials, workshops, etc.

Newsletter: An Association for Environmental Education newsletter is distributed to all members and others on a regular basis. The newsletter is a major communications link among all environmental education interest groups.

Man and Environment: The New Jersey State Department of Education, the New Jersey State Council for Environmental Education, and the New Jersey Education Association are co-sponsoring the television series entitled Man and Environment. Each of the fifteen half-hour programs in the series is scheduled to be broadcast five times a week on WNET and all four channels of the New Jersey Public Broadcasting Authority. Man and Environment is suitable for teacher in-service, academic purposes with high school students, college courses from cooperating institutions of higher education, and for adult and community education programs.

Environmental Education Programs Funded for 1975-76

1. New Jersey State Council for Environmental Education, Montclair State College, Upper Montclair, New Jersey 07043.

   Development of environmental education CBRU units; planning and curriculum assistance to school districts.

2. Conservation and Environmental Studies Center, Box 2230, RD 7, Browns Mills, New Jersey 08015.

   Conduct workshops for OBIS program.

3. Delaware Valley Conservation Association, Box 159, Stillwater, New Jersey 07875.

   Holds a minigrant for environmental education workshops.

4. Pollution Control Center, Union Public Schools, Union, New Jersey.

   Development and dissemination of kits and units of study.

School Programs and Activities

See: Environmental Education in New Jersey - Statewide Survey Report, The New Jersey State Council for Environmental Education at Montclair State College, Upper Montclair, New Jersey 07043.

University and College Programs and Activities

1. Department of Earth and Planetary Sciences, Newark State College, Morris Avenue, Union, New Jersey 07083.
2. Glassboro State College, Glassboro, New Jersey 08028.
3. Environmental Action Committee, Union Building, Fairleigh Dickinson University, Teaneck, New Jersey 07666.
4. New Jersey State School of Conservation, Stokes State Forest, Branchville, New Jersey. Director: Dr. John Kirk.
5. Department of Geology and Geophysical Sciences, Princeton University, Princeton, New Jersey 08504.
6. William Patersen State College, North Haldon, New Jersey.
7. Jersey City State College, Jersey City, New Jersey.
8. Union Community College, Cranford, New Jersey.
9. Ramapo College, Mahwah, New Jersey.
10. Seton Hall, South Orange, New Jersey.
11. Montclair State College, Upper Montclair, New Jersey.
12. Rutgers University, New Brunswick, New Jersey.
13. Brookdale Center for Environmental Management, Brookdale Community College, 765 Newman Springs Road, Lincroft, New Jersey 07738.

Note: Most of New Jersey's 21 community colleges are engaged in environmental education activities to varying degrees.

Groups and Agencies with Interest in Environmental Education

The following directories are available:

1. A Professional Resource Directory in Environmental Education, The New Jersey State Council for Environmental Education at Montclair State College, Upper Montclair, New Jersey 07043.
2. Directory of Environmental Organizations, New Jersey Conservation Foundation, 300 Mendham Road, Morristown, New Jersey 07960.
3. Directory of Environmental Consultants in the New Jersey Area, New Jersey Conservation Foundation, 300 Mendham Road, Morristown, New Jersey 07960.

4. Walter Stocker, President, Citizens for Conservation,
10 Rankin Avenue, Basking Ridge, New Jersey 07920,
(201) 766-2449.

A volunteer group organized in Fall, 1969, in Bernards Township, Somerset County, concerned with the total environment. It has been represented at hearings and meetings throughout the State of New Jersey and has also participated in Federal hearings, in particular the hearings before the Subcommittee on Education of the Committee of Labor and Public Welfare, U.S. Senate Environmental Quality Act, May 19 and 20, 1970. During the past two years, Citizens for Conservation carried on a pilot project of utilizing para-professional environmental educators who had qualified by taking a course given by the Somerset County Park Commission and been accredited by Columbia University. Programs were established in grades K-6 and 12. Because of the extensive effort expended, many requests for assistance in this type of program have come to the group.

5. Trenton Environmental Coalition, Trenton League of Women
Voters, Elizabeth Salett, President, 6 Kensington Avenue,
Trenton, New Jersey, (609) 394-8420.

This group grew out of the League of Women Voters' Task Force on Ecology. The Coalition's membership consists of about fifty individuals and representatives of groups and institutions, such as the Trenton City Government; UPI; The Rodent and Insect Control Program; the Trenton Boys' Club, Trenton; Mercer County Chamber of Commerce; Goodwill Industries; the Trenton Council of Civic Association, etc.

6. Passaic River Coalition, 25 Holmesbrook Road, Basking Ridge,
New Jersey 07920. Chairman: Ella F. Filippone, (201)
766-3416.

This organization has been serving as an umbrella group for the many environmental organizations which have been formed in northern New Jersey during the past few years. It distributes a newsletter to over 300 state, county, municipal, and community leaders throughout the Basin. The Coalition has been acting as a clearinghouse for information and has developed two programs, "Can the Passaic River Be Restored as a Model River?" and "And Then the Floods Came!"

7. Monmouth Eco-Center Inc., 629 Mattison Avenue, Asbury Park,
New Jersey. President: Dr. Maring S. Levetin, (201) 775-
4949 or 536-2063.

Has a program of service activities including: maintaining an environmental hot line, processing complaints about maintaining and disseminating information on recycling activities in the county.

8. Essex County Park Commission, 115 Clifton Avenue, Newark, New Jersey.

   The Commission has a division of Environmental Sciences and a Center for Environmental Studies.

9. Earth Awareness Foundation, 350 Grove Street, Somerville, New Jersey 08876. Chairman: Jerome Lederer, (201) 722-7300.

10. Trails and Conservation Committee, 171 Diamond Spring Road, Denville, New Jersey 07834.

11. Somerset County Park Commission, P.O. Box 837, Somerville, New Jersey 08876. Walter A. Jones, Chief Naturalist-Director of Environmental Education.

    The Commission has an Environmental Education Center which employs a new concept of using land, physical facilities such as buildings and trails, educational equipment, and educators who are also well-trained naturalists, ecologists and conservationists, to teach people about themselves and their interrelationship with their surroundings.

12. New Jersey Citizens for Clean Air, 770 Inwood Road, Union, New Jersey 07085.

13. Anti-Pollution League, 77 Homewood Avenuc, Allendale, New Jersey 07410. Larry Bogart, Executive Director, (201) 327-3914.

    The Anti-Pollution League is composed of concerned citizens who endeavor to educate themselves and the general public on the hazards of radio-active waste release. Members work to instruct citizens on prevention of such contamination as well as furnishing literature and free speakers upon request.

14. Environmental Self-Defense League, 285 Madison Avenue, Madison, New Jersey 07940.

15. Thunder Mountain Vocational Educational Environmental Center, Newton Board of Education, Star Route, Layton, New Jersey 07851, 948-6767.

    National Park System, Division of Vocational Education, New Jersey State Department, and Newton Public Schools. The overall aim of the Center's Land Lab is environmental awareness, focused on all students in the state, with special emphasis on those from the inner-cities, Title I children, young children and parents of head start, mentally retarded and neurologically impaired children, and vocationally oriented students. The latter are of prime interest to the lab since its location and environment lend themselves to the introduction and practice of environmentally oriented vocations.

16. Sparta Action Volunteers for Ecology, Mrs. Walter R. Schaefer, President, 23 Wallkill Road, Sparta, New Jersey 17871.

17. Stratford Environmental Action Committee, Bob Frundlock Jr., President, 221 Union Avenue, Stratford, New Jersey.

18. Systems for Change, Inc. 132 West State Street, Trenton, New Jersey 08608, (609) 392-0500. Barry A. Passett, President.

19. Residents Effort Against Pollution (REAP), 240 S. Walter Avenue, Trenton, New Jersey 08629.

20. Ocean Nature and Conservation Society, Winn X. Epstein, President, 219 Eighth Street, #9B, Lakewood, New Jersey 08701, (201) 363-0121.

    The Society is concerned with the preservation of all facets of nature and encourages sound conservation practices throughout the state of New Jersey. Members endeavor to make the public aware of environmental threats and hazard and urge effective control methods to be adopted at local and state levels.

21. North Jersey Conservation Foundation, 300 Mendham Road, Morriston, New Jersey. Executive Director: David F. Moore.

    A non-profit tax exempt membership foundation.

22. Mid-Atlantic Council of Watershed Association, Paul M. Van Wegan, President, P.O. Box 171, Pennington, New Jersey 08534, (609) 466-3100.

    The Council was created in order to share knowledge and experiences for the mutual benefit of all watershed organizations; to analyze problems that affect watersheds in the area; and to foster the watershed approach to resources development. It is also eager to assist in the formulation of new watershed organizations.

23. New Jersey Citizens for Clean Air, Suite 405, 144 S. Harrison Street, East Orange, New Jersey 07018, (201) 355-9450.

24. Monmouth Eco-Center, 629 Mattison Avenue, Asbury Park, New Jersey 07712.

    Member of Ecology Centers Communication Council.

25. Maplewood Committee for Consumer Action, 63 Maplewood Avenue, Maplewood, New Jersey 07040.

26. KEEP, Inc., 11 Morris Court, Summit, New Jersey 07900. Contact: Mrs. D. B. Coward.

27. Conservation and Environmental Studies Center, Box 2230, RD 7, Browns Mills, New Jersey 08015. Director: Dr. Eugene Vivian.

28. Citizens for Environmental Action (CEA), 49 Dogwood Lane, Berkeley Heights, New Jersey 07922.

29. South Branch Watershed Association Inc., 34 Center Street, Clinton, New Jersey 08809, 735-7040.

Since 1959, the Association has been hard at work promoting environmental protection throughout the South Branch Raritan Valley from Budd Lake in Morris County to confluence with the Raritan River in Somerset County. A voluntary, non-profit, non-political corporation, the Association is the focal point through which people and businesses of the area can unite in their efforts to make the South Branch Valley a more pleasant and profitable place in which to work and live.

30. Hackensack Meadowlands Development Commission, 1099 Wall Street West, Lyndhurst, New Jersey 07071.

31. Federation of Conservationists, United Societies, Inc., Robert P. Litch, Executive Director, P.O. Box 25, Barnegat Light, New Jersey 08006, (609) 494-2072.

The Federation was established in order to preserve the integrity and resources of the state from exploitation as well as to enhance and maintain the natural beauties of New Jersey and protect its wildlife. It combats disturbances by industry and housing developments and attempts to educate the public in areas of conservation. The Federation promotes research in ecology, geology, botany, wildlife management, health, conservation, urban blight, etc.

32. New Jersey Department of Environmental Protection, P.O. Box 1390, Trenton, New Jersey 08625.

Resource Materials Available

1. Resource Guide to Environmental Education, The New Jersey Department of Education, Environmental Education Project, 10 Seminary Place, New Brunswick, New Jersey 08903.

2. A Professional Resource Directory in Environmental Education, The New Jersey State Council for Environmental Education at Montclair State College, Upper Montclair, New Jersey 07043.

3. Directory of Environmental Organizations, New Jersey Conservation Foundation, 300 Mendham Road, Morristown, New Jersey 07960.

4. Directory of Environmental Consultants in the New Jersey Area, New Jersey Conservation Foundation, 300 Mendham Road, Morristown, New Jersey 07960.

5. Education for Survival, A Social Studies Science Curriculum, Grades 1, 2, 3; Education for Survival, A Social Studies Science Curriculum, Grade 4, North Jersey Conservation Foundation, Morristown, New Jersey 07960.

6. Land-Use: Concern - Challenge - Commitment; Water Quality Monitoring Manual; Water - The Waste of Plenty; Source Book in Environmental Education and others, Conservation and Environmental Science Center, Dr. Eugene Vivian, Box 2230, R.C. #7, Browns Mills, New Jersey 08015.

7. Environmental Education, Energy - Transportation, K-8; Environmental Education, Energy - Technology, Grades 7-12; Environmental Education, Energy - Society; Environmental Education, Population; The New Jersey State Council for Environmental Education at Montclair State College, Upper Montclair, New Jersey 07043.

8. Guidelines for Environmental Education in New Jersey (In preparation).

Possible Resource People

See also: A Professional Resource Directory in Environmental Education, The New Jersey State Council for Environmental Education at Montclair State College, Upper Montclair, New Jersey 07043.

- Louis A. Iozzi, Consultant
Environmental Education
New Jersey State Department of Education
10 Seminary Place
New Brunswick, New Jersey 08903
(201) 932-2246

December 1975

NEW MEXICO

Any environmental education services offered by the New Mexico State Department of Education come from the office of the Science and Conservation Specialist. Some of the limited services offered include the printing and mailing of Fun With Dusty Roadrunner, a third grade coloring book that used our state bird as the key figure for clean-up operations. It was developed by Keep New Mexico Beautiful, Inc., to use with every third grade child in the state.

To date, only one environmental education project for this year has been reviewed. It came from the Santa Fe Public Schools and proposes an environmental park to be used, eventually, by all schools in the city.

We review and evaluate instructional materials for textbook adoptions on a four-year cycle.

There are several school districts in New Mexico which have developed local programs of their own, integrating them into existing curriculum. In fact, our newest set of state minimum standards requires that Environmental Education be integrated into the curriculum, but does not designate where. This offers the opportunity to schools to use those who have an environmental ethic as well as letting school people see the real nature and implications of a healthy environment. These schools make themselves known through correspondence or they are discovered by the staff as the schools are visited, or they are not known to this office.

We have had little or no contact with university people as to what they are doing, practically or in teacher training. The closest working relationship with a state resource agency has been the Department of Game and Fish.

Several years ago we published an Environmental Education Manual for Teachers of New Mexico (1971), and had such limited funds for distribution, workshops and additional copies that it never was as effective as it was intended.

We have never had any legislative action on environmental education; after an experience with mandated drug education, it was felt to be an undesirable thing anyway. The State Board's inclusion of Environmental Education as an integrated component is considered more appropriate.

At one time, a strong pitch was made toward teacher certification requirements in Environmental Education, but none have ever been included. The University of New Mexico at Albuquerque does offer a degree in this area.

- B. K. Graham
  Science and Conservation Specialist
  State Department of Education
  Education Building
  Santa Fe, New Mexico 87503
  (505) 827-5391

December 1975

NEW YORK

State Plan for Environmental Education

New York State does not have a state plan for environmental education. Several years ago, the now-defunct Temporary State Commission on Youth Education in Conservation received a grant from the Office of Environmental Education, U.S.O.E., to develop such a plan. The result (ED 077 715, ED 077 716) was a body of recommendations and guidelines for sampling environmental education needs within the regions of the State. There has been no effect in terms of policy and direction as a result of this effort.

The prospects for formulation of a State plan are remote.

Environmental Education Legislation

The only legislation pertaining is the mandate that Conservation Day, the last Friday in April, be observed annually, and in appropriate fashion, by the schools in New York State.

Two types of bills have been proposed in recent years:

1. legislation mandating minimum instruction in conservation and environmental education at various, or all, levels from K-12.
2. legislation creating a grant-in-aid commission to sponsor proposals for public information, formal classroom instruction, research, and graduate studies in environmental education.

Such legislation has been successfully opposed by the legislature, the Education Department, and the Budget Director. Budget proposals by the Education Department for environmental education funding for the agency have been opposed by the legislature and the Budget Director.

The prospects for such legislation are remote.

Teacher Certification

New York State has no provisions or standards for certifying teachers for environmental education instruction or supervision. There is no effort underway to develop such certification.

Coordination

The State Education Department does not support a position of Environmental Education Coordinator, per se, but has assigned the responsibility for such coordination, on a nearly full-time basis. to: Barry W. Jamason, Coordinator, Environmental Education, State Department of Education, Albany, New York 12224. (518) 474-5890

The responsibilities include the following functions: environmental curriculum development; national, state, and local liaison; assisting local school districts in curriculum planning and development; proposal review.

Advisory Boards

A Council of Environmental Advisors ceased functioning in March of this year. There exists an organization called the Environmental Planning Lobby which strives to promote environmental legislation, but it is a lobby and not an advisory board.

Publications of Environmental Education Instructional Materials

* + Environmental Education Instructional Activities, K-6. (1970) (ED 045 436)
Description of a variety of student activities for the elementary grades. Designed to be used in an interdisciplinary approach.

+ Environmental Education Instructional Activities, 7-12. (1970) (ED 045 437)
Description of a variety of student activities for the secondary grades. Designed to be used in an interdisciplinary manner at all grade levels and in all subject areas.

+ An Environmental Experience. (1971) (ED 033 989)
Designed specifically for the observance of Conservation Day-Earth Week. Contains an accounting of a variety of experiences in which a school may engage for the purpose of involving students, faculty, and the community in action programs for environmental improvement.

* + Handbook of Environmental Education Strategies. (1972) (ED 066 298)
Contains details describing methods of teaching environmental education in an interdisciplinary manner. Case studies, family activities, community projects, field trips, clubs, and the use of a variety of written and graphic materials are included as examples. Also suggested is a method of incorporating environmental concepts into all existing State syllabuses.

* How Did We Get Here? (1972)
a 20-minute sound film in color depicting American lifestyles and their effect on the environment. A study of the attitudes of man traces some causes of environmental deterioration.

* A Better Way To Live. (1973)
A color filmstrip with accompanying tape which explores alternative lifestyles and how they relate to the environment. An in-depth look into the effects of population, industry, affluence, and big business on the balance of nature.

* A Better Way To Live. (1973)
A manual containing suggested discussion questions, projects, and activities that may be used with the filmstrip to enhance its effectiveness.

* A Place To Be. (1974)
A color filmstrip with accompanying tape which examines the urban environment. Personal adjustment to city life with its multitude of problems, and what people can do to solve them through awareness, concern, and positive action, is the central theme.

* + A Place To Be. (1974) (ED 098 047)
A manual containing a series of discussion questions and activities to supplement and extend the concepts presented in the filmstrip.

* + People and Cities. (1974) (ED 092 047)
An instructional manual containing well-developed lesson plans for instructors who wish to present environmental education topics. It concentrates on the problems of urban living and focuses on the individual's role in coping with them.

* + Living Within Our Means: Energy and Scarcity, K-6. (1974) (ED 093 673)
* + Living Within Our Means: Energy and Scarcity, 7-12. (1974) (ED 101 959)
Instructional activities manuals in which all activities are integrated throughout subject areas and grade levels by means of cross-references for the regular instructional understandings and environmental understandings.

* Less Is More. (1975)
A color filmstrip with accompanying tape which examines the topics of money management; food and clothing purchases; and the relationships among the consumer, the environment, and the role of the automobile in today's society.

* Less Is More. (1975)
A manual containing background material for lesson plan development, discussion questions, projects, and activities that may be used with the filmstrip to enhance its effectiveness. Student study guides are integrated with the background information.

* Environmental Quality: A Community Concern. (1976)
Seminar topics included are: transportation, land use, energy conservation, and population growth.

* Available upon request from the Bureau of Secondary Curriculum Development, Room 314 EB, State Education Department.

+ Available on microfiche and free to New York State educators from Educational Programs and Studies Information Service (EPSIS), Room 330 EB, State Education Department. Catalog numbers are given in brackets ( ). Hard cover copies are available from ERIC Document Reproduction Service, P.O. Box 190, Arlington, Virginia 22210. Price may be found in Resources in Education.

Public School Activities

ESEA, Title III (sec. 306): ECOS, Dr. Frank Thompson, Director, 833 Fox Meadow Road, Yorktown Heights, New York 10598.

ESEA, Title III: Consumerism (emphasis on environment), Ms. Virginia Gottfield, Director, Hempstead Public Schools, Hempstead, New York.

P.L. 91-516 (1974-1975): Resource Materials Development Project, Barry Jamason, Project Director, Room 314-G, The State Education Department, Albany, New York 12234. This project terminated on June 30, 1975, with final report and materials submitted to the U.S. Office of Environmental Education on September 30, 1975. The products, Designing An Environmental Curriculum...A Process, and Environmental Education Curriculum Infusion...Units for 7-12, are scheduled for availability in late 1975.

P.L. 91-516 (1975-1976): Population and Other Environmental Concerns, Center for War/Peace Studies, 218 East 18th Street, New York, New York 10003.

A News Service for Labor Unions on the Workplace Environment. Scientists' Institute for Public Information, 30 East 68th Street, New York, New York 10021.

Resource Materials Development for Utilization of Community in Environmental Education. New York City Board of Education, 67-54 Roth Street, Middle Village, New York 11379.

Others

There are no State funded environmental education programs in local schools. Locally funded operations do exist as indicated by the results of a State-wide survey to determine if environmental education science coures are offered and, if so, the duration of the course:

Duration	Percent of responding total*	Number of districts
Full year	9.3%	65
Semester	15.6%	109
Mini-course	12.9%	90
Individualized course	5.3%	37
Total	43.1%	301

* The total number of respondents to the question was 697 districts out of approximately 735 New York State school districts. There was no course offered (in special Science - Environmental Education) by 396 or 56.9% of the districts.

State Resource Activities in Environmental Education

There has been a history of commonality of interest in environmental education between the State Education Department and the Department of Environmental Conservation. The latter Department has augmented and influenced environmental education in the public schools through:

a. a network of conservation education centers
b. summer camp programs
c. conservation education teacher packets
d. field services
e. a monthly magazine (The Conservationist) and a monthly newspaper (NYS Environment), both of which have considerable national exposure.

- Barry W. Jamason
Coordinator of Environmental Education
State Department of Education
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October 1975

NORTH CAROLINA

History

Environmental education in North Carolina was given added emphasis by House Bill #118, introduced by Norwood E. Bryan, Jr., Representative, Cumberland County. Passed by the 1969 North Carolina General Assembly, this bill directed the State Board of Education to conduct a study to determine the feasibility of including the study of the environment and natural resources in the curricula of the public schools of North Carolina. The responsibility for conducting this study was delegated to the Division of Science Education within the Department of Public Instruction. A member of the Division of Science Education was appointed coordinator of the study. A Task Force, composed of persons from universities, industry, public school systems, and laymen, was selected and organized into four working committees (curriculum, teacher education, position papers, and efforts of other agencies) to do the study. Based on their conclusions, recommendations were made which included improvements in the areas of both preservice and inservice teacher education, curriculum development, and program implementation. A report of the study was made in January 1971 to the Governor and to members of the 1971 General Assembly.

As a result of the report of the Task Force, the responsibility for assisting the public schools with environmental education was delegated to the Division of Science Education of the Department of Public Instruction. Through the efforts of the Task Force and the Division of Science Education, the publication, Teachers Guide For Environmental Education, was produced. Soon after this, a slide/tape awareness program, "A Time For Man," was also produced. Both of these items have proved to be of tremendous help in initiating environmental education in the public schools of North Carolina.

In the spring of 1971, North Carolina (administrative state) received an ESEA Title V, Section 505, grant for a multistate environmental education project. Florida, Maryland, and North Carolina were the original three states with Georgia joining the project in November 1972. The major goal of the project was to expedite the development and implementation of a plan for State Education Agency leadership in the area of Environmental/Ecological Education that would be applicable to several states.

It is worth noting at this time that the 1971 legislature passed a bill which called for the establishment of a position for an environmental education specialist within the State Department of Public Instruction, but did not, however, appropriate funds for such a position.

In August 1971, to comply with one of the multistate guidelines, the Division of Science Education conducted a survey and prepared a summary of environmental education programs under way or planned for the future in North Carolina. The survey results, published in Status Report on Environmental Education Programs in North Carolina, were used as a guide for further implementation of environmental education in North Carolina public schools. The findings also led to the development in January 1972 of a Master Plan for Environmental Education in North Carolina. The Master Plan is designed to provide a framework for initiating environmental education programs that will help create, in the most rapid and efficient way possible, an environmentally-literate citizenry.

Many elementary schools in North Carolina are using the SCIS (Science Curriculum Improvement Study) program as their major instrument for the implementation of environmental education into the curriculum. During the past five summers (1971-1975), members of the Division of Science Education have trained approximately 1,165 teachers and principals to use the SCIS program. In addition, several hundred have been trained at East Carolina University. Two members of the Division of Science Education have served on the East Carolina University staff while two different teacher/principal groups were being trained.

During the winter of 1971-1972, several projects were undertaken:

> In an effort to orient teacher education personnel to environmental education, suggested guidelines were prepared and published in draft form. The publication, Environmental Education: Preservice Preparation of Teachers, was sent to 72 higher education personnel representing North Carolina's 42 teacher training institutions. The materials were revised, based on the reactions received, and the final edition was distributed.
>
> The Division of Science Education co-sponsored, along with the Durham Children's Museum, an in-service workshop for teachers K-12. The eight-session environmental workshop was responsible for training 41 teachers.
>
> A consultant was employed to produce a publication on possible field trips in the Raleigh area with suitable accompanying activities. If successful, this material could be used as a guide for statewide work of the same nature.
>
> The Division of Science Education cosponsored, along with the Salisbury Supplementary Education Center, a pilot project in teaching environmental education concepts to students with limited abilities who were potential school dropouts. Twenty-two of these students from a local high school went successfully through this program of a daily two-hour block of activity and outdoor environmental experiences.

In January 1972, two proposals, one concerning staff development and the other an environmental science symposium/fair, were submitted to the U.S. Office of Environmental Education, but neither was funded. In March 1972, the Multistate Planning Proposal was resubmitted to the U.S. Office of Education and funding was granted for a second year.

During the summer of 1972, a writing team composed of a math, a science, and a social studies teacher was employed to produce interdisciplinary curriculum materials for the middle and upper grades. Three units (Population, Pollution, Natural Resources) were produced. The Population and Pollution Units were field-tested in fourteen North Carolina LEA's during the school year 1972-1973. All three units were then revised, printed, and distributed to North Carolina's schools in March 1974.

The University of North Carolina at Chapel Hill in June and July 1972 was the scene of a two-week Interdisciplinary Workshop for teachers of math, science, and social studies. A team of three teachers (one each in science, math, and social studies) from the same school, worked together to learn about their environment and then to produce curriculum material with which they could work as a team upon returning to their school.

The staff of the Division of Science Education has continued to hold one-exposure-type workshops in environmental education throughout the state. During 1972-1975, over 3,000 teachers have been exposed to some form of environmental education in workshops. Large quantities of Division-prepared environmental education publications have been provided to teachers across the state, along with visits from our staff for all forms of environmental education services ranging from curriculum development to assistance with developing outdoor study areas.

Interdivisional work within the State Department of Public Instruction has been highly successful. The Division of Science Education has worked closely with the Divisions of Math and Social Studies on various projects including the Writing Team Project and the Interdisciplinary Workshop at Chapel Hill. Work with the Division of Cultural Arts is quite evident in several endeavors. Assistance was received from this Division in the preparation of the multimedia presentation, "A Time for Man," and later with a second slide/tape presentation, "The Energy Crisis." We also worked closely with this Division by projecting the environment of North Carolina as the theme for their annual "N. C. Heritage Week." Our work with the Division of Cultural Arts and the local organization, Wake Environment, has led to statewide environmental poster contests for two years with over 800 student entries the first year. Work with the Division of Occupational Education has also been substantial, particularly regarding their Outdoor Recreation and Applied Ecology program. The Division of Early Childhood worked closely with our Division in the production of Environmental Education: K-3 Activities. With the help of the Division of Educational Media, seven new environmentally-oriented educational TV programs have been aired. Working with the Division of Exceptional Children, a proposal was submitted, though not funded, to the U.S. Office of Education for an environmental program for gifted and talented students.

The Division of Science Education, in cooperation with the Population Center of the University of North Carolina at Chapel Hill, cosponsored two half-day workshops in the fall of 1972, on population education for the professional staff of the Instructional Services Area of the Department of Public Instruction. One session took place at the Environmental Protection Agency Center in Research Triangle Park.

Cooperative functions have been performed in conjunction with other state agencies, federal agencies, and local organizations. For example, we have worked with EPA on: the dissemination of material; tours of the EPA research facilities; EPA-sponsored programs in the schools for children (approximately 9,000); the beginning of some in-service training of teachers by EPA personnel.

During the summer of 1973, the Division of Science Education and the Environmental Protection Agency jointly sponsored two one-week environmental education workshops. Thirty-five elementary teachers from across North Carolina participated the first week with thirty-eight secondary teachers involved the second week. The workshops were held at the EPA/NERC research facility in Research Triangle Park. Instructors came from the EPA, North Carolina State University, University of North Carolina at Chapel Hill, and the Division of Science Education.

Project WASTE, a student activity (April 1972) in which more then 10,000 North Carolina secondary students participated, was conducted with enthusiasm. The project was cosponsored by the Division of Science Education and the Cooperative Science Education Center of Oakridge, Tennessee. The purpose of the project was to determine the composition of solid waste generated in residential homes.

Through the Division of Science Education, the Department of Public Instruction works closely with the North Carolina Marine Science Council, a group appointed by the Governor and charged with designing and implementing a program for the conservation and proper use of North Carolina's marine resources.

In addition, one member of the Division of Science Education serves on the Administrative Board of the North Carolina Marine Resources Center. Made up of three separate ocean centers, the primary mission of the Center is to instill in all visitors an awareness of the significance and value of our coastal and marine resources, along with a better understanding of the changes occurring in this dynamic ecological system and the citizen's role and responsibility in maintaining a desirable balance in our coastal environment.

Continued support of, and work with, environmental education is evidenced also in our publication, Science Newsletter. The last five issues have been devoted, to a large extent, to environmental education. Material evidence of our environmental education efforts, most of which have been mentioned in the body of this report, is listed and annotated in the Instructional Aids section of this paper.

Another proposal was submitted in March 1973 to the U.S. Office of Environmental Education for six one-week-long regional workshops spread over a two-year period, but it failed to receive funding. Also, in March 1973, the Multistate Planning Proposal was revised and resubmitted to the U.S. Office of Education and funding was granted for the third and final year.

An International Environmental Education Conference, sponsored by the Four-State Environmental/Ecological Education Planning Project (North Carolina, Administrative State) and planned and conducted by the Division of Science Education, was held October 15-18, 1973. Lutheridge, a summer Lutheran retreat located in the mountains of western North Carolina, was the site for the conference. Participants were leaders in environmental education from many of our states and from Canada, England, and Scotland. The purpose of the conference was to gather scientists and educators from all over the world to share information on environmental education.

During January 1974, the Division of Science Education compiled the publication, Environmental Education: Strategies for Wise Use of Energy. This was published and distributed to the schools of North Carolina in March 1974.

During the summer of 1974, a writing team composed of three primary teachers was employed to produce an environmental education activities guide for grades K-3. After editing and printing, this publication was distributed in January 1975. Since then, and with the assistance of the Division of Kindergarten-Early Childhood Education, a second printing has been distributed.

In the fall of 1974, five new environmentally-oriented TV program series were aired. These were entitled:

Animals & Such (Grades 4-6)
Relationships in Nature (Grades 4-9)
Environment in Crisis (Grades 7-12)
Life World 2000 (Grades 7-12)
What On Earth? (Grade 8)

The fall of 1975 saw the following two environmental programs added to the above list:

Science of Ecology (Grades 4-9)
Energy (Grades 7-12)

In the summer of 1975, twenty-five elementary teachers, along with one principal and one supervisor, participated in an environmental education workshop conducted by the Division of Science Education. The workshop was designed to aid teachers in planning environmental curricula for all subject areas.

During 1975, the Division of Science Education has worked closely with the North Carolina Energy Office on various energy and environmental problems. In addition, one member of the Division of Science Education serves on the State Government Energy Conservation Council.

November 2-8, 1975 was observed as North Carolina Energy Conservation Week. For this week, the Division of Science Education developed an energy packet composed of an energy sourcebook and two energy conservation posters. These packets were distributed to every school in the state.

At present, the Division of Science Education is coordinating the President's Environmental Merit Award Program in North Carolina.

Position

Through our work in environmental education, the Division of Science Education has come to believe that environmental education is education for all. Therefore, it should be established as a planned part of the curriculum in all schools. It affects all citizens in the community.

Development of environmental awareness is a process which is evolutionary in nature and, therefore, involves a continual input into the individual's conception of his surroundings. This implies that any approach taken to environmental education must begin at the earliest possible time in the learner's life and continue throughout his years of formal education and beyond.

Environmental problems are social, scientific, and economic in nature and, therefore, must be dealt with through all disciplines in the curriculum with each discipline making its own unique contributions. This implies that emphasis should be given to environmental education at all levels through all disciplines. However, an alternate approach, that of the inclusion of a special course at a specific grade level, should not be ruled out altogether.

The major task of alerting the public to the conditions of our environment should be of great concern to all educators.

The U.S. Office of Education, the National Science Foundation, the National Institute of Health, and other agencies should be encouraged to support funding of appropriate activities in environmental education.

Elected and appointed representatives at all levels should be encouraged to support legislation dealing with the quality of our environment, including education programs at the local, state, and national levels.

Environmental education programs should:

Incorporate environmental resource materials into selected areas of the school curriculum at all levels of instruction.

Include field trips into the community to study the environment as it exists.

Increase the student's awareness, appreciation, and understanding of the principle of interdependence of living organisms and their environment.

Help students grow in ability to accept responsibility to maintain or improve their environment for future use.

The school system has responsibilities:

To provide outdoor environmental study trips for real-life experiences.

To provide enabling facilities for conducting environmental studies such as adequate classroom laboratories and outdoor environmental study sites.

To provide for in-service teacher education.

To provide continual experiences (K-12) which expand upon understandings and skills.

To involve students in individual and group activities and action programs for the improvement of the local environment.

State-level personnel have responsibilities:

To provide educators with environmental education concepts appropriate to the various curriculum areas (K-12).

To assist educators in the selection and/or development of instructional materials needed to implement good environmental education programs at all levels.

To provide opportunities for educators to learn more about the environment.

To assist schools in use of the natural environment as a laboratory by--

> assisting schools in planning the uses of the school grounds or adjacent lands as outdoor laboratories,
>
> assisting schools in developing nature trails,
>
> providing resource material related to the use of outdoor areas.

To develop and maintain an up-to-date resource file and disseminate pertinent information to local units.

Instructional Aids

Prepared by the Division of Science Education of the Department of Public Instruction:

A Guide to Environmental Education Resources (1972)

This is a listing of some basic and inexpensive materials useful in teaching or learning about environmental problems that face us today. Sections are provided on paperback books, other printed materials, bibliographies, multimedia materials, periodicals and sources, and motion pictures. (K-12) (9 pp.)

A Time for Man (April 1971)

This automated slide/tape program is designed for use with teachers and lay people as a preamble to a discussion on environmental issues and/or environmental education. It attempts to point out the state of the environment in the nation, and in North Carolina in particular, and to suggest education as a possible solution to environmental problems. (Teacher and lay use) (12 Min.)

Directory (1971)

This publication is a list of North Carolina historical societies; preservation commissions; research agencies; art, children's, history, and science museums (including directors). (Teacher use) (44 pp.)

Energy Conservation: A Sourcebook (October 1975)

This publication was designed to be an idea book for energy-related activities. It contains basic energy generalizations, suggested individual and group learning experiences, a brief checklist on conservation, and selected resources. (K-12) (10 pp.)

Environmental Education: Concepts, Activities, Bibliography (March 1971)

This publication is composed, as its title suggests, of three major sections. The first section contains Roth's 111 Environmental Concepts. Section two contains 168 environmental education activities broken down into the areas of ecology, natural resources, pollution, and environmental decision-making. An annotated bibliography composes the third section of the publication. (K-12) (48 pp.)

Environmental Education Game: "Fox City" (October 1972)

This is a role-playing game for students in and above the middle grades. It involves making decisions that affect resources and conservation in the town of Fox City. The entire class can participate in this game which is designed to illustrate conflict of interests. (7-12) (6 pp.)

Environmental Education Instructional Units: Population, Pollution, Natural Resources (1973)

These three units were prepared for use in classrooms in North Carolina. An interdisciplinary approach encompassing mathematics, science, and social studies is utilized in these units. (7-12)

Population: This unit is a game built around the town of Fox City. The focus is on how an increase in population will affect various aspects of town life and what changes will have to occur to accommodate this increase. It contains pages to be duplicated for student packets, answers to problems, and an appendix.

Pollution: This activity-oriented unit is divided into mini-units on air, litter, noise, and water pollution. Each mini-unit is divided into categories called Looking It Over and Exploring. It contains pages to be duplicated for student activity sheets and an appendix.

Natural Resources: This activity-oriented unit is divided into mini-units on forests, wildlife, water, and soil and mineral conservation. It contains role-playing situations that require the use of imagination by students and an appendix.

Environmental Education: K-3 Activities (December 1974)

Eighteen basic concepts (used repetitively at each level) which are important for young children to understand if they are to become environmentally literate are the basis of this publication. Under each concept, activities in science, language arts, social studies, math, art, music, and physical education are suggested which emphasize the stated concept. (K-3) (123 pp.)

Environmental Education: Preservice Preparation of Teachers (1973)

This publication offers practical suggestions as to approaches and methods that may be employed as environmental education is introduced into preservice teacher education. (Teacher-preparing institutions)

Environmental Education: Problems, Projects and Exercises/Grades 4-10 (February 1972)

This publication is designed primarily to utilize the students' mathematical skills. The exercises section is intended to motivate teachers and students to further their understanding of environmental issues. The special problems section aims at challenging students' problem-solving abilities, and the projects suggest ways in which efforts may be made to improve environmental conditions. An answer section and bibliography are also included. (Grades 4-10) (46 pp.)

Environmental Education: Strategies for Wise Use of Energy (March 1974)

This publication was designed for teachers to use at all levels (K-12) as a resource for energy education. It is composed of numerous interdisciplinary instructional activities and an appendix containing energy conservation checklists, charts. glossary, and selected readings and films. (K-12) (71 pp.)

Living Organisms for the Elementary Classroom (April 1975)

Equipment and supplies information, culturing techniques, and an appendix on life cycles and resources make up this publication. This publication is a joint project of the Science Education Divisions of East Carolina University and the Department of Public Instruction. Despite the title, this booklet may be used by all teachers K-12. Many of the organisms mentioned are those used in the SCIS program. (K-12) (17 pp.)

Master Plan for Environmental Education in North Carolina (Draft) (January 1972)

This plan is designed to provide a framework for initiating environmental education programs that will help create, in the most rapid and efficient way possible, an environmentally-literate citizenry. (Department of Public Instruction use) (28 pp.)

Status Report on Environmental Education Programs in North Carolina (August 1971)

This report is the result of a survey conducted to determine the status of environmental education in North Carolina. It is based on information obtained from questionnaires mailed to each local superintendent in North Carolina requesting information on any present environmental education programs in his district or any planned for the future. The report also contains responses from the deans of North Carolina's schools of education. (Department of Public Instruction use) (33 pp.)

The Energy Crisis (August 1973)

This automated slide/tape program is primarily designed to assist public school teachers in obtaining awareness and understanding of some implications of the "energy crisis." (Teachers and lay persons) (9 min.)

Teachers Guide for Environmental Education (September 1970)

The first section of this publication provides the reader with an orientation to what environmental education is, what its goals are, and how they might be achieved. Subsequent sections are on Ecosystems, Natural Resources, Pollution, and Environmental Decision-Making. Each section is followed by a detailed bibliography of free and inexpensive books, films, filmstrips, records, tapes, booklets, units, pamphlets, and other resources. (K-12) (228 pp.) (Supply depleted)

Under Development:

Developing School Site Environmental Education Facilities

This will be a guide for developing total school site environmental education facilities and learning centers as joint school/community projects.

Prepared by the Division of Occupational Education of the Department of Public Instruction:

Outdoor Recreation and Applied Ecology (July 1972)

This publication is a curriculum guide to teaching the course of outdoor recreation and applied ecology. The purpose of the course is to provide learning experiences which will enable a person to acquire knowledge and develop understanding and skills necessary to making a meaningful choice in preparing for, entering into, and advancing into an outdoor recreation or an ecology career. (7-12) (194 pp.)

Suggestions and Procedures for Developing Teaching-Learning Stations (July 1972)

This publication is designed to accompany the Outdoor Recreation and Applied Ecology curriculum guide. It provides descriptions, purposes, requirements (land, equipment, facilities, development time), and references for the development of 23 teaching-learning stations. (7-12) (43 pp.)

Suggestions and Procedures in Developing Nature Trails (1972)

The purpose of this booklet is to provide information for teachers, administrators, and students on how they may plan and develop a nature trail at or near their school. It also contains suggested activities for different disciplines and a section on available environmental education resources. (26 pp.)

- Paul Taylor, Director, and Clinton Brown, Consultant
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State Department of Public Instruction
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NORTH DAKOTA

Environmental education is progressing at a steady pace in North Dakota. The Department of Public Instruction has not set up any requirements that schools must follow, but it has encouraged the teaching of environmental education at all grade levels and in all disciplines.

The North Dakota Science and Mathematics Newsletter has, for many years, supplied materials that could be used and incorporated into the curriculum. In 1971 a mimeographed publication called Activities for Environmental Education was sent to the schools. This publication was revised in 1973. Copies of Pollution: Problems, Projects and Mathematical Exercises were purchased from the State of Wisconsin and distributed to the schools of North Dakota.

Some of the schools in North Dakota are teaching special courses in ecology which provide in-depth studies. There is one school that is developing an arboretum on the school grounds to provide an outdoor classroom. This project is becoming a model for other schools.

Environmental education has maintained a place of importance in the news media because of strip mining, the Garrison Diversion Project, the energy shortage, and pollution. There are no statistics to show that students are becoming more aware, but it appears that progress is being made.

- George Fors
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August 1975

OHIO

State Plan

Several committees and task forces have written reports about environmental education in Ohio over the years. Each report has helped educators in Ohio move ahead with appropriate and varied programs. Recommendations that should have produced stateside coordination and consistent funding, however, are often ignored by those who have the power to act on them. A new effort to implement a broad program of environmental education in Ohio is now underway.

An ad hoc committee of interested people has asked the Ohio Academy of Science to convene a blue ribbon committee to put together an implementation strategies report. The Academy has raised to date $18,000 to finance the cost of this effort and is now in the process of selecting the committee members. Regional committees will also be established and citizen input will be sought.

Environmental Education Legislation

There is no environmental education legislation in Ohio.

Teacher Certification

A discussion on this topic is now underway. Several institutions of higher education are preparing proposals to request environmental education certification for teachers completing their new programs. The broad and complex nature of environmental education will require a long dialogue and many compromises to produce a list of competencies that constitute a certifiable program. In fact, it may be determined that under existing certification philosophy, environmental education certification is not possible.

State Consultant

The Ohio Department of Education has had a Conservation or Environmental Education Supervisor or Consultant for thirty-five years. In some cases, science supervision has also been the responsibility of this person. Beginning with the current environmental education consultant (January 1975), only environmental education activities are assigned to the position.

The environmental education consultant has two main functions:

1. facilitate the expansion and improvement of environmental education in the 617 public school districts and in the non-public schools in Ohio;

2. assist the 51 teacher education institutions in providing all preservice teachers with quality experiences in environmental education.

The current consultant: Dr. John Hug, Consultant, Environmental Education, Ohio Department of Education, 65 South Front Street, Room 801, Columbus, Ohio 43215. (614) 466-5015

Environmental Education Advisory Board

There is no environmental education advisory board in Ohio.

Environmental Education Publications

Seven publications were made available to educators in Ohio in 1973 and 1974. The supply is almost depleted and the remainder are being reserved for classroom teachers in Ohio. The publications are in the ERIC data base. A new publication, *A Teacher's Introduction to Energy and Energy Conservation*, will be available to Ohio classroom teachers early in 1976.

Public School Environmental Education Programs

Ohio has hundreds of good environmental education programs. Some are carried on by individual teachers, some are grade level projects, and others are school-wide or district-wide programs. Funding comes from many sources. There is no way to know about them all. In fact, it may be that some of the low-budget, low-profile programs are having a greater impact on the environmental ethics and values of Ohio's youth than are the high-budget, high-visibility programs that are usually described in a summary of this type.

Here are descriptions of several types of Ohio programs:

1. Fourteen Ohio school districts have received ESEA Title III adaptation grants for the 1975-76 school year. These funds are provided to help teachers use the environmental education curriculum materials of the Title III Willoughby-Eastlake project in their classes. Equipment, materials, and consultant services are used to implement the program.

2. The Ohio Facilitation Center, funded under ESEA Title III, Section 306, provides educators in Ohio the opportunity to examine and implement successful innovative educational practices which have been developed across the country. Five national environmental education developer/demonstrator projects are available in this program. Several schools have expressed interest in these environmental education programs and are in the process of submitting applications.

3. Resident Outdoor Education programs are expanding at an increasing rate with longer programs and more students and with additional schools starting programs each year.

4. School Land Laboratories are also being developed at an increasing rate. A current survey of Ohio's 88 counties indicates that there are 116 schools with developed land labs in the 42 counties reporting as of October 15.

5. Units, mini-courses and interdisciplinary environmental education courses are appearing for the first time or are expanding in many schools.

6. The Ohio Watershed Heritage Project, coordinated by the Institute for Environmental Education, continues to expand its activities. It began as a water quality monitoring project but now an expanding program is beginning to deal with additional community environmental problems. The program is now in five Ohio regions. In each region a cluster of schools, the district office of Ohio EPA, and a state university cooperate to direct a school-community effort to collect and use scientifically reliable environmental data to solve community problems. Preliminary teacher education materials, equipment, and supplies are available through the Institute for Environmental Education, 8911 Euclid Avenue, Cleveland, Ohio 44104: Joseph H. Chadbourne, President.

College and University Activities in Environmental Education

The Ohio Department of Natural Resources and the Ohio Department of Education cooperated to produce a list of "Environmental Education Inservice Opportunities for Ohio Educators." Most of the listings were college and university listings with agency and private groups also included.

Environmental education experiences are provided early and middle childhood education majors at The Ohio State University-Newark during a four-year alternative program designed to prepare teachers to be confident and competent in planning environmental learning for boys and girls. An interdisciplinary approach begins in the freshman year with learning on the campus nature trail and culminates in a student teaching quarter which incorporates teaching responsibilities at an environmental education resident center. For further information, contact Dr. Lillabelle Holt, OSU-Newark, University Drive, Newark, Ohio 43055.

State Agency Activities in Environmental Education

An informal meeting in October attended by nine people from state and national governmental agencies has launched a new effort to coordinate agency efforts in environmental education for Ohio.

The informal group will be known as Ohio Interagency Committee for Environmental Education: OICEE (pronounced, Oh I see). A second meeting was scheduled for December.

A severe blow to environmental education in Ohio was dealt when the Ohio Department of Natural Resources severely cut the environmental education budget, resulting in program activity reductions and a layoff of several staff. A broad state-wide austerity move by the state administration and legislature is responsible for the cut.

Other Environmental Education Activities

The first Cooperative Environmental Education Center, CEEC (pronounced seek), was established on October 15. The Ohio Department of Education, Ohio Department of Natural Resources, The Environmental Studies Center at Bowling Green State University, and four local county Soil and Water Conservation districts are cooperating to provide environmental education services for a four-county area. Physically the Center will be located in the curriculum resources library of the Environmental Studies Center, 124 Hayes Hall, Bowling Green State University, Bowling Green, Ohio 43403.

A $30,800 Energy Conservation Education Project is now underway. A teacher education component coordinated by the Institute for Environmental Education calls for five one-day workshops to help teachers plan and conduct energy conservation activities designed primarily to reduce natural consumption in school and at home but also including other energy conservation activities. Most of the preparation was done by the Environmental Studies Center at Bowling Green State University under the direction of Judy DuShane. Another component of the project is designed to assist school district personnel to manage their buildings in such a way as to successfully meet the natural gas cutbacks of 40% or more anticipated for the 1975-76 winter.

Population Education will get a boost this year due to a cooperative project with the national office of Zero Population Growth. An invitational meeting will be held during the winter to develop some state-wide goals for population education. This meeting will be followed by one or more teacher education workshops.

- Dr. John Hug, Consultant
Environmental Education
Ohio Department of Education
65 South Front Street, Room 801
Columbus, Ohio 43215
(614) 466-5015

November 1975

OKLAHOMA

State Plan

Oklahoma does not have an official written state plan for environmental education. The State Education Department recommends that environmental awarenesses, concepts, issues, problems, alternatives, and solutions be integrated into the elementary level curriculum via a transdisciplinary approach. At the secondary level, we recommend that instructional activities appropriate to environmental education be included as a meaningful and regular part of the natural sciences and social studies curricula.

Environmental Education Legislation

For many years, Oklahoma has had the following "requirement" in the School Laws of Oklahoma publication: (Article XI, Section 159. Courses of Study - What to Include. School Laws of Oklahoma, 1974) "Courses of Study formulated, prescribed, adopted or approved by the State Board of Education for the instruction of pupils in the public schools of the state shall include such courses as are necessary to insure:

> ...6. The teaching of the conservation of natural resources of the state and the nation that are necessary and desireable to sustain life and contribute to the comfort and welfare of the people now living and those who will live here in the future, such as soil, water, forests, minerals, oils, gas, all forms of wildlife, both plant and animal, and such other natural resources as may be considered desirable to study..."

In the Annual Bulletin for Elementary and Secondary Schools (Administrator's Handbook), under Elementary Progress Criteria; (Progress Criterion g.), it is stated: "Elementary schools may correlate the related subjects as follows: ...(3) environmental education should be correlated with social studies, health, science, agriculture and home economics; ..."

The Legislature made a small amount of funding available this year for printing environmental education materials.

The Governor has proclaimed the week of November 3-7, 1975, as "Environmental Education Week in Oklahoma." Numerous organizations, State and Federal agencies will be assisting schools to promote and provide environmental education activities for students during that week.

Certification

Oklahoma has no teacher certification requirements specifically related to environmental education.

State Coordinator

Howard Potts is the individual in charge of environmental education; has assignment as Coordinator in the Planning, Research, and Evaluation Section of the Federal Programs Division.

Environmental Education Advisory Boards

We have none.

Environmental Education Publications

Two publications are presently available to teachers in-state. These are a bibliography, Sources of Materials and Information on Environmental Education and Ecology; and a set of Environmental Study Area Leadership Techniques and Instructional Activities for Environmental Education Outdoor Use. Availability out-of-state is quite limited; we don't have funds to distribute this type of publication in quantity free and we aren't geared up to recover cost of printing on a cost basis. Several thousand copies of the bibliography and probably over one thousand copies of leadership techniques have been given to teachers in-state.

Exemplary Public School Activities

Oklahoma has one environmental education project funded under E.S.E.A. Title III. This project is entering its third year of funding; it serves the seven southeastern-most counties of the state. The project provides a director and seven resource teachers who work with teachers and students in their assigned areas to integrate environmental education unto the existing curriculum.

Public education in Oklahoma has never received any funding under the Environmental Education Act even though the State Education Department submitted three proposals the first two years. Local districts and colleges and universities have also submitted what were thought to be excellent proposals.

With the exception of the one E.S.E.A. Title III Project, no environmental education programs operate with specially designated Federal or state funding.

The Conservation Districts have provided limited financial assistance to a few projects; the Oklahoma Federation of Women's Clubs and the General Federation of Women's Clubs are currently assisting one school with its project.

Otherwise, the programs operating in the schools are locally funded. Probably the more exemplary programs would be those of Ada, Ardmore, Tahlequah, and Guthrie. Two other districts which had well-organized operational programs have discontinued them due to financial problems associated with costs of transportation and insurance while on field trips.

College and University Activities in Environmental Education

Most of the universities in the state offer courses pertinent to environmental education. However, none require any of these courses for graduation.

East Central Oklahoma State University maintains and operates the Oklahoma Environmental Information and Media Center which offers its services to both education and other interests.

Several of the universities have conducted workshops related to environmental education for teachers. Some have provided opportunities for their student teachers to visit outdoor environmental education programs in operation.

This summer and last summer, as a cooperative endeavor involving the State Department of Education and the universities and funded by National Science Foundation, we have conducted three three-week Elementary Science Curricula Workshops each summer in which environmental education activities were given major emphasis. We had approximately 150 participants last summer and 120 participants this summer. The site utilized for these workshops is the Oklahoma Geology Camp near Canon City, Colorado.

Agency and Organization Activities in Environmental Education

Of the various agencies, the local Conservation Districts of the Soil Conservation Service have been most involved and very helpful. Others which have had various degrees of involvement (some major) are the: Forestry Association of Oklahoma; Forestry Division of the State Department of Agriculture; Department of Wildlife Conservation; Oklahoma Wildlife Federation; Oklahoma Federation of Women's Clubs; and Garden Clubs.

Other Environmental Education Activities in the State

We have twenty-nine regional (multi-district, multi-county) one-day in-service workshops scheduled over the state beginning August 21, 1975 and running through February 27, 1976. There will be sessions conducted relative to environmental education in each workshop with one-half day allotted each to elementary and secondary levels. Twenty-one additional workshop dates have been reserved for the larger districts on a request basis for this next school year.

Other Information

We are planning to compile and/or develop some instructional packets on "energy conservation" and make these available to teachers later in the school year if funding which we've requested becomes a reality.

- Howard Potts, Coordinator
Planning, Research, and Evaluation Section
State Department of Education
2500 North Lincoln Boulevard
Oklahoma City, Oklahoma 73105
(405) 521-3196

August 1975

OREGON

State Plan for Environmental Education

A plan is in existence, developed by the environmental education advisory committee in 1970 and updated in 1975, approved by the State Board of Education. The position of environmental education specialist was established in the Basic Education section of the Department of Education. Funding was limited to the specialist's salary and to basic office equipment and supplies plus limited funds for the in-state travel of the specialist.

The early concept of environmental education, outdoor education, changed in the early 70's as evidenced in the new minimum standards for graduation requirements published by the Department in 1974. Environmental education was mentioned in the section related to social responsibility under citizenship. Two program goals were stated:

1. Students will recognize problems which affect the interdependent life systems in the environment.

2. Students will be able to analyze the costs and benefits of alternative solutions to environmental problems.

Oregon has six goals for Oregon Learners, all six closely related to environmental concerns:

1. The learner: communications, computing, listening, problem solving.

2. The individual: mental and physical health, appreciation of the arts, coping with change.

3. The producer: careers, identification of personal interests and talents.

4. The citizen: responsibility, understanding, respect and interaction with all cultures, generations, and races.

5. The consumer: management of personal resources; i.e., meeting obligations to self, family and society.

6. The family member: acquire the knowledge and skills to strengthen family life.

Each of these goals encompass the six basic topics of environmental education:

1. Energy
2. Earth resources
3. Resource reclamation
4. Population dynamics
5. Interdependence
6. The quality of life

Minimum Standards related to environmental education from the working draft of the Elementary-Secondary Guide are reproduced below:

6.5 ENVIRONMENTAL EDUCATION

6.5.1 Purpose

Environmental education is that part of the educational process which prepares people to make decisions and take actions which create and maintain optimal relationships between themselves and the environment which sustains them.

There is vital need for an international environmental ethic. The world has reached the point where attitudes and behavior of its citizens must reflect concern for and understanding of their relationships with both natural and human environments. It is education for survival.

6.5.2 Goals - Environmental education encourages and assists each student to:

a. Understand that the earth as an environment is composed of many smaller environments, each with its characteristic biological, physical, and cultural features.

b. Act on the realization that energy from the sun is the basic source of energy for all life.

c. Recognize that organisms in any given environment are linked with an ecosystem and are part of the ongoing phenomena of the environment.

d. Know that the earth's resources are limited and must be managed to maintain the delicate balance necessary for continued human existence.

e. Understand that human values and attitudes concerning the environment are based on cultural, social, economic and political factors.

f. Demonstrate a willingness to accept responsibility and accountability for their impact on the environment.

6.5.3 Curriculum Content and Organization

All K-12 students are provided learning opportunities in environmental education. The program in K-3 is an awareness program. Students learn about their own environment in the home, the classroom, the playground and the neighborhood. Opportunities are made for them to explore, touch, taste, feel, listen and look and to understand the interdependencies of all living things. Activities might include growing plants, making terrariums, aquariums, caring for pets. This develops understanding, self-respect, and acceptance of individual roles in maintaining a good environment in the classroom, school and playground.

The program in grades 4-6 expands on the awareness of the interrelationships and interdependencies of all living organisms. Opportunities are made for students to experience living-learning outside the school through visits to both urban and rural environments, and to accept responsibility for their improvement through an introduction to concerns of society related related to waste disposal, pollution, and conservation of resources. During the fifth or sixth grade an actual outdoor living experience in the natural environment, if planned and followed up, provides students with depths of understanding and appreciation which increase their abilities to make wise decisions affecting the environment of the future.

Students from grade seven through grade twelve have opportunities to investigate environmental issues at the local, state, national and international levels. Simulations, role playing and buzz groups are particularly valuable in helping them learn to work cooperatively in problem solving.

Visits to community council meetings, legislative hearings and environmental agency meetings when related issues are being discussed afford them opportunity to participate in meaningful ways. Films, TV programs and speakers help provide the students with information that can be used as the basis for discussion and decision making in class activities, helping students to recognize the economic, political and environmental implications for the future of the human race.

6.5.4 Indicators of a Quality Program

a. The school district provides a clear philosophy of environmental education to serve as a base for the program.

b. All students, grades K-12, through all instructional programs are provided learning opportunities in environmental education.

c. The school district provides a wide variety of current instructional materials and media for both students and instructional staff.

d. Learning experiences are provided in both natural and human environments outside of the classroom. An extended opportunity for an outdoor living experience is provided for every student prior to the seventh or eighth grade.

e. Students are provided opportunities to participate in community environmental action programs.

f. Students are provided experiences which involve aesthetic, cultural, and ethical concepts.

g. Students are provided the opportunity to learn how to distinguish between the unlimited wants of individuals and the limited resources available to satisfy those wants.

h. Students understand that they, as individuals, have an impact on their environment and accept their responsibility and accountability for its improvement or its deterioration.

Legislation

A. Amendment to Senate Bill 22 - relative to funding for environmental education at Department of Education level - died in Ways and Means in 1975 legislative session.

B. House Joint Resolution 66 passed 1975 legislative session. This resolution states "Schools should act to make resource conservation an integral part of their physical operations and curriculum." Specifically this resolution deals with recycling.

Teacher Certification

At present Oregon teachers are required to demonstrate competency or college preparation in science, including environmental science.

Staff

The Department of Education has one specialist for environmental education position at the present time - Mary M. Lewis, 942 Lancaster Drive, NE, Salem 97310, phone (503) 378-4326.

Department of Education Advisory Committee for Environmental Education

Vic Brockett, 3865 Knox Butte Road, Albany 97321; Gay Bower, 3520 S.W. Mt. Adams Ave., Portland 97201; Bill Brewster, Central Point Public Schools, 451 N. Second Street, Central Point 97501; George Carter, Trojan Nuclear Plant, Rt. 2, Box 120, Rainier 97048; Phyllis Ford, Department of Parks and Recreation Management, University of Oregon, Eugene 97403; Kermit Horn, 3025 Kincaid St., Eugene 97405; Ernest McDonald, U.S. Forest Service, P.O. Box 3623, Portland 97225; Janet McLennan, Governor's Office Natural Resources, State of Oregon, Salem 97310; Ted Ozawa, Education Department, Willamette University, Salem 97308; Mike Vaughan, Jackson Co. IED, 101 N. Grape Street, Medford 97501.

Local District Environmental Education Specialists

Doug Nichols, Lane IED, 1200 Highway 99N, Eugene; Mike Vaughn, Jackson IED, 101 N. Grape Street, Medford 97501; Barbara Fox, Maryhurst College, Clackamas Co. IED, Maryhurst 97036; Warren Gilfillian, Multnomah IED, P.O. Box 16657, Portland 97216; Jim Gorter, Washington Co. IED, 172 S. 1st Ave., Hillsboro 97123; Harold Wik, Box 200, Beaverton 97005; and Lyle Mason, Salem School Office, 2825 Commercial St. S., Salem 97302.

Publications Available from Oregon Department of Education, 942 Lancaster Drive, NE, Salem 97310:

1973 - Energy Crisis - a special publication suggesting school activities which stress individual responsibility toward energy crisis problems. Cost: $2.00.

1974 - Environmental Encounters - a resource for teachers designed to help students help themselves. Cost: in-state, free; $2.50 out-of-state.

1975 - Living Education - A Guide to Overnight Sites - includes planning suggestions for teacher resource and a directory of sites in Oregon. Cost: in-state, free; $2.50 out-of-state.

Exemplary Public School Activities

Portland Public Schools, Area II, has been awarded an environmental education grant through the Department of Health, Education and Welfare. The Student Environmental Action Model - STEAM - incorporates in its objectives the opportunity for high school students to become effective data collectors and also affords experiences which will enable them to process this data into decision-making agencies. Research and research presentation will serve as the framework for achieving the educational objectives. This research will necessarily be of two kinds: 1) scientific measurement and 2) examination of the legal standards, processes and authority which underlie agency action and decision making.

This program has a resource team designed to provide an adequate background in the education of young public-input scientists. The staff includes social science specialists, science teachers, lawyers trained in environmental and administrative law and environmental committee persons. Thus, this proposal directly confronts and attacks the crucial issues of quality and quantity of environmental education; communication; data collecting and leadership. Contact Robert Sesar, Coordinator/Director, Portland Public Schools, 8020 NE Tillamook Street, Portland 97213, phone (503) 255-7210.

Community Energy Symposia. OSPIRG (Oregon Student Public Interest Research Group). 115 S.W. Fourth Avenue, Hughs Building, Room 400, Portland 97204. Contact: Laura Williamson.

Unfortunately, the Environmental Education Center at Portland State University has lost its funding. Dr. Donald Stotler is back with the Portland School system.

College and University Activities in Environmental Education

State and private colleges and universities in Oregon are placing greater emphasis on environmental education in science, economics, social studies, political science, health and in other related fields. Community colleges emphasize careers in the environment.

An effort is being made to encourage undergraduate and graduate courses in teacher education colleges to place greater emphasis on environmental concerns in all disciplines at all levels. The efforts of the Department's ad hoc advisory group to seek special courses in environmental education as a prerequisite for certification have met with little success to date due principally to the many priorities currently being stressed in today's educational systems. There is the hope that with cooperative efforts a synchronization of priority needs will be made and the goals for environmental education will be a part of the total concept in courses of economics, political science, social studies, science, math and other related subjects.

The Agricultural Economics Division of the Extension Department at Oregon State University has developed materials on economics and land use. More information is available from George Wyatt, Extension Hall #240, O.S.U., Corvallis 97331.

State and Federal Resource Agency Activities

State and federal agencies assist in the environmental education efforts. Examples are:

1. The U.S. Forest Service education program, Investigating Environmental Issues. Contact: Ernie McDonald, Education Officer, U.S. Forest Service, P.O. Box 3623, Portland 97225.
2. The U.S. Park Department NEED Program. Contact: Glenn L. Hinsdale, 523 4th and Pike Building, Seattle, Washington 98101.
3. The U.S. Fish and Wildlife Commission. Contact: John Sayer, 1500 N.E. Irving Street, Portland 97208.

The State Land Use Planning Commission has made a great effort to provide educational resources for the adult communities in the state. More information is available from John Gustafson, Department of Land Conservation and Development, 1175 Court Street, NE, Salem 97310.

The Governor's Energy Office is concerned with public understanding and support and has a task force currently working on communications for statewide public education. Governor's Energy Office, 528 Cottage Street, NE, Salem 97310.

Education officer for Oregon Fish and Wildlife, Cliff Hamilton, is serving as an ad hoc member on the advisory committee. Contact: C. Hamilton, P.O. Box 3503, Portland 97208.

The Oregon Environmental Council has published a resource handbook titled "To Live with the Earth" (1974) written and edited by Gay Bower. Cost: $1.00, available from Oregon Environmental Council, 2637 S.W. Water Street, Portland 97201.

Energy and Man's Environment Program. A statewide conference co-sponsored by the Energy Office and the Department of Education was conducted in February 1975 for teachers and administrators. This program is funded by the Northwest Power companies and is available throughout the western states. More information is available from Dr. John Jones, E.M.E., 0224 S.W. Hamilton Street, Portland 97201.

Activity Guides available to teachers are to be followed up with ten regionally located teacher inservice workshops throughout the state. Local school district have been given the opportunity to pilot-test these guides and revised materials will be made available.

Western Regional Environmental Education Council and the American Forest Institute sponsored "Project Learning Tree." These guides will be presented at ten special teacher inservice workshops regionally located throughout the state in 1975-76. Local schools are volunteering to pilot test the materials. More information is available from Gerry Kelly, Weyerhauser Corporation, Tacoma WA 97401 or June McSwain, Director Education Division A.F.I., 1619 Massachusetts Avenue, N.W., Washington, D.C. 20036.

Other Environmental Education Activities in the State

Oregon educators and public and private agency personnel concerned about environmental education in the state, organized the Environmental Education Association of Oregon. This organization works with the Department of Education Advisory Committee to implement the environmental education plan for Oregon. Membership dues in the organization assist in funding for teacher inservice workshops and provide the necessary means of statewide communication through the publication of the Environmental-Gram. E.E.A.O. regional contact people are: Warren Gilfillan, Multnomah County IED, P.O. Box 16657, Portland 97216 - Region I N. Willamette; Doug Nichols, Lane County IED, 1200 Highway 99N, Eugene 97401 - Region II S. Willamette; Patti Swanson, P.O. Box 1165, Roseburg 97470 - Region III Siskiyou-South Central; Region IV Central - Open; John Kurtz, Umatilla National Refuge, Umatilla 97882 - Region V Blue Mountain - Northeastern; Dick Gritman, Malheur National Wildlife Refuge, Box 113, Burns 97720 - Region VI Malheur - Southeastern. State officers are: President, Mike Vaughan, 101 N. Grape Street, Medford, Oregon 97501; President elect, Kermit Horn, 3025 Kincaid Street, Eugene, Oregon 97405; Treasurer, Sam Frear, P.O. Box 10607, Eugene, Oregon 97401; Secretary, Sue Plaisance, 804 3rd Street, Lake Oswego, Oregon 97034.

Summary

Oregon as a state is vitally concerned with environmental issues and in the education of the total community to these concerns. Efforts of the state agencies are somewhat fragmented. At the present time there appears to be an effort being made to coordinate these efforts through the Governor's Energy Office. A Task force has been appointed and a liaison person from each of the other state agencies has been appointed to assist this task force as needed.

At present, efforts to set up a total state plan for environmental education have not met with success. Perhaps with the present efforts towards coordination, this is not needed. There is need to evaluate what is currently in existence and to make wise use of all that is in the best interests of environmental education in Oregon at all levels and in all disciplines.

- Mary M. Lewis, Specialist
Environmental Education
Department of Education
942 Lancaster Drive, NE
Salem, Oregon 97310
(503) 378-4326

October 1975

PENNSYLVANIA

State Environmental Education Contact

Mr. Robert W. Schwille, Senior Program Adviser, Environmental Education, Pennsylvania State Department of Education, P.O. Box 911, Harrisburg, Pennsylvania 17126, (717) 787-5423; Mrs. Eleanor H. Bennett, Environmental Education Adviser, Pennsylvania State Department of Education, P.O. Box 911, Harrisburg, Pennsylvania 17126.

The Pennsylvania Department of Education environmental staff are currently developing the following publications:

1. a K-3 curriculum guide
2. a Resource Inventory for Environmental Education
3. Environmental Education Study Sites

PDE environmental staff will recruit Commonwealth students for participation in the Youth Conservation Corps, conducted by the Department of Agriculture, The Department of Interior and Pennsylvania's Bureau of State Parks and Bureau of Forestry.

Environmental Education Legislation

There is no legislation, either passed or pending, concerning environmental education. There is a curriculum mandate stated in July 1969:

> Environmental education shall be a part of the instructional program in every school. This instruction may be presented in separate planned courses or integrated into other courses.

Colleges with approved environmental education programs to prepare teachers as environmental educators include:

Shippensburg State College
Slippery Rock State College
West Chester State College
Mercyhurst College
California State College
Allegheny College
Thiel College
Pennsylvania State College
Clarion State College
Kutztown State College

Environmental Education Workshops

The PDE environmental staff is assisting Project KARE to plan and conduct five workshops throughout the Commonwealth. During 1975-1976 Project KARE is serving as a Developer/Demonstrator Project in the USOE National Diffusion Network and will serve as an exemplary model for strenghtening environmental studies in local schools.

The action workshops prepare school and community persons to implement the "KARE Approach" by establishing Local Action Programs of Environmental Studies. The Action Workshop includes:

1. The KARE Philosophy
2. KARE Objectives
3. Adoption Components
4. KARE Action Workshops
5. Action Workshop Format
6. 1975-76 Workshop Schedule
7. Adoption/Adaption Agreement

Project KARE is a five-county Intermediate Unit Project for Urban-Suburban-Rural Cooperation in environmental education.

Project KARE, Matthew M. Hickey, Director, Colony Office Building, Route 73 and Butler Pike, Blue Bell, Pennsylvania 19422, (215) 643-7600.

ESEA Programs

The following are ESEA, Title III Programs. Contact: James Blair, ESEA Title IV Part C Coordinator, Bureau of Instructional Support Services, Pennsylvania Department of Education, Box 911, Harrisburg, Pennsylvania 17126.

Project Life - Elementary (K-8)
Living Instruction for Ecology
Central Greene School District

Integration of ecological concepts with the sciences, arts, human interests and human interactions with their environment.

Environmental Transdisciplinary Involvement Program
Fox Chapel School District

Development of teacher-student environmental activities permit the student to explore in his environment and develop his talents according to his needs and interests. Program is an adaptation of the National Environmental Education Development Program developed by the National Park Service.

Tayamentasachta (K-10)
Center for Environmental Studies
Greencastle-Antrim School District

The Environmental Center student activities are coordinated and developed as a part of the school curriculum at each grade level. The Director provides in-service training for classroom teachers, teacher demonstration lessons and conducts necessary environmental encounters for teachers and students.

Other School Programs

Environmental Education (for academically talented students)

Theory and Practice Grades 4, 5 and 6
McKeesport School District

Academically talented students consider how environmental problems are related to population and human geography and disseminate this information to the community.

Environmental Education Elementary (K-6)

State College School District

Students identify, interpret, predict, measure, compare contrast man's effect upon the environment and its effect on him.

Environmental Education (K-12)

Shikellamy School District

Identification of a progressive sequence of ecological themes and concepts for each grade level.

Total Involvement in Ecological Education

Grades 6, 7, 8, 9
Hollidaysburg Area School District

Students and teachers will demonstrate the need for an understanding and possible solution between the inbalances of society buyers - the rapidly growing sum of human wants and the limited capacities of the earth. An environmental study area adjacent to the elementary school will also result from this project.

Penns Valley

Community Environmental Center Middle School (6,7,8)
Penns Valley School District

Extend development of the Land Resources Center, write curriculum and provide in-service training for teachers.

Environmental Awareness

Secondary
Millersville State College

The project introduces students to the nearshore marine environment. Secondary students from Pennsylvania School districts conduct surveys of marine populations, measure salinity, temperature, oxygen content light, currents, tides, turbidity and waves and analysis of man made marine environmental problems.

Areas's Natural Resources

Secondary
Philipsburg Oceola School District

A program for newly certified Biology teachers to interact with students as they participate in community environmental projects.

Penncrest School District
Secondary
Randolph-East Mead High School

A student center environmental study program. Teacher serves as a facilitator of learning and provides resources to the students, i.e., scientific equipment, audio-visual resources and identify areas for environmental studies.

Environment Living Through Language Arts
7-12
Clairton City

A student-teacher language art-environmental education project.

Open-Space Non-Gradedness
Southside Area School District
R.D. #1
Hookstown, Pennsylvania 15050

Elementary program (K-6) of open-space with emphasis on outdoor education, ecology, mathematics, science, industrial arts, and home economics.

1. Design and implement instructional systems for an open-space, non-graded learning environment.

2. Conduct in-service programs for staff members, designed to intensify and reinforce their knowledge of ecology, home economics and industrial arts.

3. Design a post-evaluative assessment of the cognitive and affective student gains from the open-space non-graded approach to learning.

McKeever Environmental Learning Center
R.D. #3, Box 121
Sandy Lake, Pennsylvania
Director: Richard Touvell

In 1964, Ivan McKeever and six local Sandy Lake residents, (members of the Sandy Creek Conservancy) had a dream! After a decade of dreaming, planning, working and frustration by the conservancy, Penn Soil RC & D Project, elected government officials and many others, the Center is now a reality and ready to serve.

The facility is owned by the Pennsylvania taxpayer and is coordinated by a Board of Commissioners representing a consortium of numerous groups. Day-to-day operation is guided by a director, teacher naturalist, environmental educator, student teachers, work-study student and community volunteers. The Center is open to all citizens.

School classes at all levels combine the "Living Textbook" and buildings to study math, social studies, music, language arts, science, ecology, etc.

Researchers from high schools, colleges, universities, and government search for answers to social and scientific problems.

Public Officials such as mayors, township supervisors and planning commissioners meet to discuss and attempt to solve environmental and social issues.

Organizations such as civic, service, conservation and social groups are provided with a near-perfect environment to interact in.

Individuals and small groups such as artists, writers, and photographers find the "just right" mood and/or subject mood.

Nolde State Park Environmental Education Center
Nolde Forest State Park
R.D. #1, Box 392
Reading, Pennsylvania 19607

Planning in cooperation with the Bureau of State Parks and the Berks County School Board.

An integrated complex of trails is developed to facilitate field study activities to promote the interdisciplinary understanding of our environment.

The center dedicates itself to the development of an educational process, with the fundamental aim to change attitudes so that man can understand and appreciate his role in the nature of things and be motivated to do something constructive concerning his environment.

The program design excompasses participants from pre-school programs, elementary and secondary schools, institutions of higher education, adults and out-of-school youths and a separate component for the handicapped.

Allegheny County Environmental Coalition (ACEC)
Mrs. Howard Hays, Chairman
204 5th Avenue
Pittsburgh, Pennsylvania 15222

ACES works closely with the Western Pennsylvania Conservancy. It does not have an environmental education program of its own.

The only connection with environmental education, outside of the members groups individual interest, will be a community information clearing house which will be staffed by volunteers. This will serve to answer citizen's questions on the environment.

Association of Conservation District Directors, Inc.
Aaron Stauffer, President
R.D. 1, Ephrata, Pennsylvania 17522

School site development project with local school cooperation. Workshop for Executive Assistants from 50 counties to help districts reach their goal of promoting Outdoor Environmental Education sites at the local school level.

Environmental Education TV Series
Robert W. Schwille
Senior Program Adviser Environmental Education
Department of Education
Box 911
Harrisburg, Pennsylvania 17126

An environmental education television-film series "But Where Will The Earth Land" has been developed for use by school districts and intermediate units in Pennsylvania.

The series, consisting of 15 twenty-minute films, depicts the spaceship-earth concept and nature's limited basic life support systems-air, water and land.

Developed for the Pennsylvania Department of Education by the Allegheny Educational Broadcasting Council and Pennsylvania State University, the films are directed at middle school pupils. A committee of state and local educators and educational television stations personnel helped prepare the series. The series consists of:

"But Where Will The Earth Land?"
"Land - They Call it Real Estate"
"Water - A Quiet Flow"
"The Web of Life"
"Nova - Technology"
"Another One - Population"
"Only Two People In The World - Recreation"
"The Law, The Environment and You"
"Energy"
"The Rivers Home"
"An Ocean of Air"
"Insect Control"
"Fifteen Billion Hot Dogs Aren't Enough"
"I Know Where I'm Going Because I Know Where I Am"
"An Environmental Ethic"

Environment 2000
Miss Velma Hart, Director
TB and Health Society
630 Janet Avenue
Lancaster, Pennsylvania 17601
(717) 397-5203

Clean Air Program - all Lancaster County Schools involved.

Environmental Impact of Electric Generation--Nuclear and Fossil

John McDermott
Senior Program Adviser, Science Education
Department of Education
Box 911
Harrisburg, Pennsylvania 17126

The Pennsylvania Department of Education has developed a mini-course for secondary schools and adults which presents a balanced, unbiased study of the environmental benefit-to-risk ratio associated with the generation of electrical energy by either conventional or nuclear means.

Environmental Planning and Information Center, Inc. (EPIC)
Thomas Dolan, Executive Director
313 South 16th Street
Philadelphia, Pennsylvania 19102
(215) 732-1958

EPIC was established in January 1970 "to assist and support those organizations and individuals working responsible to improve the environment." It is a private, non-profit organization supported entirely by foundations. EPIC's ultimate goal is to inform the public by supplying environmental information on a statewide basis.

EPIC activities include:

1. a completed study for possible reorganization of the state government entitled "A New Direction for the Future."
2. a study on the feasibility of Town Conservation Commissions.
3. a current project to identify all environmentally oriented organizations within the state.
4. an attempt to develop dialogue between industry and competing interests through a series of forums on neutral ground at Pennsylvania State University.

Career Education in Natural Resources
Grant OEG-71-4432
James H. Mortenson
Agriculture Education
Pennsylvania State University
University Park, Pennsylvania 16802

Natural Resource Education in Grades K-6, a guide for elementary grade teachers.

Exploring Occupations in the Natural Resources, a resource booklet for students in grades 7, 8 and 9.

Career Education in the Natural Resources, a suggested high school curriculum guide for administrators, teachers and guidance counselors.

Career Education in Natural Resources, a suggested guide for administrators of post-secondary programs.

The Garden Club Federation of Pennsylvania
Ruth Boyles
111 The Maples
Pittsburgh, Pennsylvania 15215

People and Their Environment (PATE) books are supplied to schools by Garden Club members on a local basis.

Group for Environmental Education (GEE)

GEE is a non-profit corporation engaged in teacher training, development of innovative curriculum materials and of programs in learning areas related to man's interaction with his physical surroundings. It works on two parallel paths - teacher training and development of resource materials.

Much of GEE's work is carried on outside of the state. They have developed one workbook and are currently working on the second and third books of the series.

Lu-Lac Environmental Council
Sandra Raymond, Director
Luzerne-Lackawanna Environmental Council
415 North Washington Avenue
Scranton, Pennsylvania 18503

Gaining headway today concept. Unite schools and community in environmental problem solving. Regional environmental water monitoring, operation fish watch on the Lackawanna River at 12 sites. Suckers in traps are monitored by eight schools involved. Schools are: Valley View High School, North Scranton Junior High School, West Scranton High School, Riverside, Old Forge High School, Pittston Area High School, Wyoming Area High School, Sell Junior High School.

Involved with teacher education and in-service.

Montour Preserve
Harry T. Barnes, Director
Pennsylvania Power and Light Company

In-service for teachers of 3, 4 and 5th grades. Had special program for children.

Pennsylvania Federation of Women's Clubs and The Pennsylvania Bureau of Forestry

Pennsylvania Youth Conservation Week. To honor youth organizations and conservation projects developed by them at the state and local level. Ceremonies to be held at six regional locations.

Aims of PYCW:

1. To stimulate within established youth organizations an interest in and enthusiasm for conservation;
2. To instruct our young people in the multiple use of resources of land, water, minerals, forests and wildlife of the Commonwealth; and
3. To induce adult organizations to work earnestly for conservation education by aiding and assisting youth groups in their projects.

Schuylkill Valley Nature Center
Mr. Richard James, Executive Director
Hagy's Mill Road
Philadelphia, Pennsylvania 19128
(215) 482-7300

The Schuylkill Valley Nature Center is a non-profit corporation located within the city of Philadelphia. It offers graduate programs in Ecology, Water Conservation, etc., in cooperation with Temple University and teacher experience in cooperation with Pennsylvania State University. Formal instruction is given at the center at the elementary and secondary levels in accordance with a regular teaching curriculum of ten basic programs in outdoor education. Adults are reached through workshops and public lectures. The Center also conducts a summer program for adults in Water Ecology and a similar program for youths in Ecology.

Science, Nature and Survival of Man
Dr. Irvin T. Edgar
Division Chief, Science Technology
Department of Education
Box 911
Harrisburg, Pennsylvania 17126

A non-science major student program is a teacher-student interaction over major societal issues that aims to change student attitudes. Program in following school districts: Lehighton School District, Rose Tree Media School District, Central Dauphin School District, Chambersburg Area School District, Shippensburg School District, Tamaqua School District, West Chester School District, Mt. Penn School District, Reading School District, Allentown School District, Penn Manor School District, Millersville School District, Phillipsburg-Osceola School District.

Western Pennsylvania Conservancy
Conservation Foundation
Carnegie Mellon University

Have developed social study units (4 weeks) for 9th grade Environment and Change and for 12th grade World Environmental Concern.

Admiral Perry Area Vo-Tech School
Ecology Program
Dr. Bryan V. Fluck
Ebensburg, Pennsylvania

Concerned with ecology problems in Appalachia, industrial pollution and control, industrial electric generation, plumbing practices, coal mining and agricultural practices.

Allentown School District
Carl Nunley
Environmental Education Coordinator
31 South Pennsylvania Street
Allentown, Pennsylvania 18102
(215) 435-7402 or (215) 432-8347

K-6 program with environmental education site. Teacher inservice.

Asbury Woods Environmental Study Area, K-12
Millcreek School District

A school district project of K-12 activities and teacher inservice programs. An early Title III project has resulted in a 40 acre outdoor laboratory.

Bethlehem School District
Urban Environmental Studies
Robert Zimmerman
Steve Rituper
Bethlehem School District

An integrated 7th grade curriculum program to study the resources of the city.

Brockway Area High School
George Miller

Two courses (1 period/day, 5 days/week): Natural Resources, grades 9-10; Environmental Crisis, grades 11-12.

An outdoor education laboratory has been developed with 3,000 foot nature trail with 25 educational stations. Archery range and hunter safety courses.

Conestoga Valley Ecology Club
c/o Department of Biology
Conestoga Valley High School
2110 Horsehoe Road
Lancaster, Pennsylvania 17601

Environmental Education Program.

Connellsville School District
Perry Culver
Curriculum Coordinator

Interdisciplinary K-12 program. Working with Western Pennsylvania Conservancy.

Eastern Lancaster County School District
Robert D. Herr

Began as agriculture program in elementary school. Environmental education interdisciplinary program with teacher inservice and three hour graduate program from Penn State University.

Elizabeth Forward School District
Frank Ciavarra

Nike Site Development for environmental education with consultation from Western Pennsylvania Conservancy.

Emmaus Junior High School
Thomas D. Fegeley
660 Macungie Avenue
Emmaus, Pennsylvania 18049
(215) 965-9001

Environmental Education Program

Fishing Creek Valley Elementary School
Marilyn Root

Developed outdoor site on school grounds-used as outdoor classroom by the teachers.

Harrisburg Outdoor Laboratory (Elementary)
Charles A. Rossini, Director
Harrisburg School District
Harrisburg, Pennsylvania 17111
(717) 564-0250 or (717) 234-6131

Harrisburg Outdoor Education Program - "Outdoor and Environmental Education Center."

Gettysburg School District
Victoria Weitzel

Site development-water quality studies. Total environment involvement.

Johnstown Area Vo-Tech School
MDTA (Manpower Development Training)

Pilot program in Auto Emissions Control. Itinerant teacher who works with this AVT school and surrounding school districts in conducting the program. The program is for persons presently employed as auto mechanics and their employers. Approximately 2,900 people will be reached in Pennsylvania over a one year period.

Lower Bucks Area Vo-Tech School
MDTA (Manpower Development Training)

Same as above.

Laurel Highlands School District

School site development for environmental education with consultation from Western Pennsylvania Conservancy.

Londonderry Elementary School
Wendell Poppy, Director
260 Schoolhouse Road
Middletown, Pennsylvania 17057
(717) 944-7431

Outdoor Education Program.

Mercer County Area Vo-Tech School
Ecology Program

Develop curriculums needed to train secondary education students as Agricultural Environmental Technicians. Identify characterization of pollutants on plants, animals, soil and water. Air monitoring. Natural resources for recreation. Maintenance of sensing equipment. Source and emission inventories. Enforcement programs and procedures.

Northwestern Lehigh School District
Environmental Service Task Force
Mrs. Miriam Haas

Intermediate Unit #1. In-service program. Environmental task force for service to school districts that request it.

Williamsport Community College Outdoor Education
Center and Earth Science Facility
Mr. Joseph Sick

This is a secondary education facility shared with the community college. Facility presently under construction. 169 acre outdoor education center, featuring: Dam and reservoir, Spring development, Natural well, Amphitheater, Observation Tower, Picnic shelter, Diversion terraces, Field border, Citizen Lecture Hall, Horticultural Area, Air and Water Test Building, Interpretive Trail, Arboretum, Managed Woodlot, Geology Trail, Forest tree plantations, Sewage treatment plant, Plant materials nursery, Agriculture Conservation Area.

Wyalusing School District
H. Glenn Hart
Mansfield State College
Mansfield, Pennsylvania

Teacher workshop in conservation and ecology.

Center for Air Environment Studies
Dr. William J. Moroz, Director
Pennsylvania State University
University Park, Pennsylvania 16802
(814) 865-1415

CAES is an interdisciplinary unit of the University which coordinates research and instruction concerning the interaction of humans and their air environment. The Center's objectives are: to provide educational opportunity through study of the air environment; to attain greater knowledge of the air environment through research and compatible academic programs; to be cognizant of and responsive to the needs of the community regarding the air environment.

Center for Marine and Environmental Studies
Dr. James M. Parks, Director
Lehigh University
Bethlehem, Pennsylvania
(215) 867-5071 Ext. 453

CMES is an interdepartmental research organization which was established to promote interdisciplinary research opportunities in the areas of marine science, ocean engineering, and environmental science for faculty as well as graduate students from several science and engineering departments throughout the University.

Northwest Lehigh School District
Mrs. Miriam Haas

Five teachers and 150 sixth grade students in interdisciplinary ecology studies. Developed and landscaped the school grounds for aesthetic, ecological study area.

Five year Rodale project-recycling compost with garbage, etc.

Parkland High School
Edward M. Davis
Orefield, Pennsylvania 18069

The Jungle

Pennridge School District
William S. Woehr
Blooming Glen, Pennsylvania 18944

Environmental Education Program.

Project SANE (Students Appreciate Nature's Environment)
John V. Martz
Susquehanna Intermediate Unit

Resident experiences for 130 special education students to be held at Mount Luther Camp. Students and teachers participate together in an environmentally-oriented education project that will include such activities as:

1. Sensory experience in the natural setting

2. Study of simple conservation principles

3. Interaction with knowledgeable resource specialists

4. Implementation in a real life setting of those principles of the democratic process that are generally only talked about in a classroom.

Southern Lehigh School District
Freed Trail Project
John R. Yeager

Children from Sacred Heart Home and Southern Lehigh School District. The major objective was to provide an experience in environmental awareness and included such conceptual realms as geography, history, nature, culture, science, technology, contemporary social and political problems consisting of field trips and/or project work.

Southern Lehigh School District
Robert Csizma, Principal
Liberty Bell School
Coopersburg, Pennsylvania

School site used by elementary teachers in all subjects.

Pennsylvania High Schools with Vo-Ag programs participate in a cooperative wildlife restoration program sponsored by the Pennsylvania Department of Education and the Pennsylvania Game Commission.

Text and project booklets available to students and teachers. Game Commission Officers work with teachers and students. $1,000 is available for statewide awards.

All high school and area vocational technical schools having agricultural education courses participate in a statewide Conservation and Environmental Program.

This is a project of the Pennsylvania Association of FFA Inc. in cooperation with the Pennsylvania Jaycees organization, the Pennsylvania Association of Conservation District Director, Inc., the state Conservation Commission, the Pennsylvania Department of Environmental Resources, the U.S. Soil Conservation Service, and Agricultural Education Section of the Pennsylvania Department of Education.

Pennsylvania High Schools with agricultural education programs participate in a Nationwide by States FFA Chapter program known as BOAC (Beautifying Our American Communities). Sponsored by Lilly Endowment, as a special project of the National FFA Foundation.

Student texts and program booklets are furnished. System of local, state and national awards. Special State Governor's award plaque.

Major program items are:

- Why community development is important.
- Identifying community resources.
- Development and promotion of community resources.
- Providing community water, sanitation and solid waste services.
- Solving housing needs.
- Improving the quality of environment.
- Beautifying the community.
- Providing recreation facilities and programs.
- Providing adequate health and welfare care.
- Planning visable communities.

Some additional high school Vo-Ag Departments with Environmental Education programs are:

Derry Area, Westmoreland County Tunkhannock Area, Wyoming County
Annville-Cleona, Lebanon County
Pine Grove Area, Schuylkill County
Lake Ariel, Wayne County

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College and University Activities

Dusquesne University
Pittsburgh, Pennsylvania 15219
(412) 433-6000

With an Educational grant from the National Endowment for the Humanities, Duquesne University is developing a graduate program which combines the philosophical tradition of existential phenomenology and ecology. The program focuses on the life of a specific community in Pittsburgh, and structured field experience will be integrated into the academic program.

Institute for Community Development
Community Environmental Education Program
Gannon College
Erie, Pennsylvania 16501
(814) 456-7523

Professor Stanley J. Zagorski and Rev. Austin J. O'Toole are environmental scientists there. Part of the program has been exploration of Presque Isle State Park as an environmental education site.

Great Lakes Research Institute
Frederick Buggie, President
155 West 8th Street
Erie, Pennsylvania 16501
(814) 453-5068

The Institute is a non-profit organization which is devoted to research of the societal environment. It draws together ad hoc committees and consortia of scientists and engineers from both colleges and industries in order to perform research and development work under special contracts and grants.

Institute for Environmental Studies
Professor Ann L. Strong, Director
University of Pennsylvania
3400 Walnut Avenue
Philadelphia, Pennsylvania 19104
(215) 594-5000

The Institute was established to conduct research in the nature and management of man and his environment. As a school-wide institute, it broadened the scope of such study and offered facilities and administrative services to all departments of the school. Three subsidiary centers - Human Resources Center, Urban Design Center and Center for Ecological Planning and Design have been established within the Institute to pursue research in a sub-area of the overall interests of the Institute.

Institute for Research on Land and Water Resources
John C. Grey, Director
Pennsylvania State University
Research Building A
University Park, Pennsylvania 16802
(814) 865-3933

The Institute was established in order to aid investigators from many fields to work together in solving our environmental problems. These specialists must consider social, political, and economic aspects of the problems, as well as the usual physical considerations. Three distinct centers of operation have been established within the Institute: Land Resources Center, Water Resources Center and Regional Analysis Center.

Pennsylvania State University
College Health, Physical Education and Recreation
275 Recreation Building
The Pennsylvania State University
(814) 465-0407

Dr. Betty van der Smissen
Associate Dean for Graduate Study and Research
College of Health, Physical Education and Recreation

Series of books including outdoor education.

Pennsylvania State University
Outdoor Education Workshops
George Ward
Recreation Building
Pennsylvania State University
University Park, Pennsylvania 16802

1972 Teacher In-service meeting (1 day).

Mifflinburg Schools, Conrad Weiser Schools, Laurel Highlands Schools, Elizabeth Forward Schools.

1972 Teacher In-service meetings (2 days).

McKeesport Schools, Sharon Schools, Swarthmore (Ridley) Latrobe Schools, Schuylkill Haven Schools, New Kensington Schools, York, Ogontz, Scranton, Allentown, Wilkes-Barre, Schuylkill.

- Robert W. Schwille
Senior Program Adviser
Environmental Education
State Department of Education
P.O. Box 911
Harrisburg, Pennsylvania 17126
(717) 787-5423

November 1975

RHODE ISLAND

Environmental Education in Rhode Island is in a transitory state - transitory, because the state plan may be coming "off the back burner", because leadership is being assumed by the State Department of Education, because environmental interest groups are becoming more viable and are assuming more responsibility and leadership, and because the Governor's Environmental Task Force has gone beyond one or two specific charges and is now examining the total environmental picture in the state. Environmental Education in Rhode Island in the past year or so has gone beyond the sporadic and limited efforts.

State Plan for Environmental Education

The Proposed Plan for Environmental Education in Rhode Island was developed by Ecology Action for Rhode Island in the winter and spring of 1973-74 as a result of a grant from the Northeast Environmental Education Development project. Presented to the Board of Regents for Education in May 1974, it was acted upon by them, after several staff studies, in February 1975. The Regents made environmental education an area for service emphasis, directed the appropriate Bureau in the State Department of Education to do so, and called upon the sponsors of the Plan, as well as other environmental groups, to further their role of advocacy. The Regents' action also implied that in one year they would be asking what was done. Recently the Governor's Environmental Task Force, charged with examining possibilities for coordinating environmental efforts, asked for a presentation of the Plan. Between this interest, the increased activity by the State Department of Education, and the initial year drawing to a close, there will be renewed interest in and possible action upon the Plan.

Environmental Education Legislation

There is no environmental education legislation in Rhode Island and, because of the state's and the State Department of Education's concerns about mandated programs or curricula there will probably be no such legislation in the near future.

State Department of Education

While the Department of Education does not have environmental education certification as an entity or part of a dual certification (the Proposed Plan recommended the latter), it has assumed leadership. The Bureau of Technical Assistance within the Department has substantially increased its activity in environmental education. Besides the program development assistance utilized by local school systems that Bureau offers an in-service training program in environmental education, the link to the ERIC system, an identified resource person in environmental education, and is presently developing a resource guide for environmental education. Further, the Bureau and its personnel have been active in seeking inter-agency cooperation.

Environmental Education Activities

Within the state, there are a variety of environmental education activities taking place.

Schools:

Jamestown School Lawn Avenue Jamestown 02835	Title III program "Ecology and the Community" at the junior high level based upon local environmental issues, community development and monitoring resources.
Cumberland Public Schools Mendon Road Cumberland 02864	Title III program "C-85" based upon community planning and land-use.
Toll Gate High School Centerville Road Warwick 02886	Title III program "Marine Environment" based upon a study of our state's greatest natural resource-Narragansett Bay.
Providence Environmental Education Program Veazie Street School Providence 02908	Office of Environmental Education program based upon introducing and developing environmental education around issues related to the waterfront.
Project Earth Cranston Public Schools Park Avenue Cranston 02910	Former Title III program now locally funded environmental education throughout the schools
Project MALO Warwick Public Schools Warwick Lake Avenue Warwick 02888	Former Title III program, multi-disciplinary approach to Learning Outdoors, now locally funded environmental education throughout the schools.

Because an increasing number of systems have a wide range of activities and programs on a variety of levels, no attempt will be made to list them. A frequently used resource for many public schools is the W. Alton Jones campus, University of Rhode Island.

Colleges and Universities

Environmental Education Center
Thomas Marron, Director
W. Alton Jones Campus
West Greenwich 02816

Offers in-service public workshops and student programs.

Rhode Island College has a faculty environmental education committee and offers various courses which could be indentified with or as environmental education. Specific information can be obtained from:

Richard Green
Elementary Education Department
Mann Hall, Rhode Island College
Providence 02908

William Swigart
Director of Continuing Education
Roberts Hall, Rhode Island College
Providence 02908

The University of Rhode Island has related offerings within the several colleges. Environmental Education can be an area of concentration at the undergraduate and graduate level. Specific information can be obtained from:

William Croasdale
Department of Education
Chafee Building, URI
Kingston 02881

Donald McCreight
College of Resource Development
University of Rhode Island
Kingston 02881

The Marine Advisory Service at the Narragansett Bay campus, University of Rhode Island, has on its staff a marine education specialist who works with a number of schools and agencies concerning a marine oriented environmental education program. For information, contact:

Prentice Stout
Marine Advisory Service
Bay Campus, University of Rhode Island
Narragansett 02882

Rhode Island Junior College, Knight Campus, Warwick 02886, conducts an environmental technician program which was initially funded through vocational education monies.

Other Environmental Education Activities

Ecology Action for Rhode Island, 286 Thayer Street, Providence 02906. Offers programs and resources to schools. Maintains a resource center for teachers and the public. Currently conducting a water monitoring program under an EPA grant.

Humane Education Program, Rhode Island Society for the Prevention of Cruelty to Animals, 83 Biscuit City Road, Kingston 02881. Offers programs to schools. Presently developing a humane education curriculum.

Norman Bird Sanctuary, Lee Gardner, Director, Third Beach Road, Middletown 02840. Offers a miscellany of programs for the public, teachers and students.

Rhode Island Audubon Society, Bowen Street, Providence 02840. Offers programs and resources to schools. Also maintains a resource center.

Save the Bay, Main Street, East Greenwich 02818. Offers programs and resources to schools. Currently developing a series of forums concerning the energy issues facing the state.

Southern Cooperative Extension Service, Leonard Mitchell, 70 Pierce Street, East Greenwich 02818. The 4-H professionals within the cooperative extension service (only one is listed here) have become increasingly active in environmental education activities, within and without the schools.

State Conservation Committee, Stephen Higgins, Administrative Officer, Department of Natural Resources, Park Street, Providence 02908. Charged with responsibility for "renewable natural resources" this group is made up of representatives from the three soil conservation districts and advisors from several of the state agencies. The three districts have each "adopted" a school system and have supplied conservation education materials and aid to them.

- H. Wells French
Consultant, Program Development
State Department of Education
Hayes Street
Providence, Rhode Island 02908
(401) 277-2821

November 1975

SOUTH CAROLINA

State Plan for Environmental Education

The State Department of Education, in its Five Year Plan, has as one of its objectives environmental literacy for South Carolina students. This is not a Comprehensive State Plan. The South Carolina Advisory Council for Environmental Education has made preliminary studies and obtained a listing of reasons for devising a Comprehensive State Plan. Currently, the Advisory Council is examining the publication, On Being A Master Planner - A Step by Step Guide from a Nationwide Study of Environmental Planning, and is planning to use it in future efforts of State Plan formulation.

Environmental Education Legislation

There is no environmental education legislation.

Teacher Certification

The Post High School Committee of the Advisory Council is making a study of teacher competencies and guidelines for future courses designed for teacher preparation.

Consultant

The Consultant for Environmental Education is Alice Linder, State Department of Education, 803 Rutledge Building, Columbia, South Carolina 29201.

In response to the needs described on a survey of school districts, a sourcebook for environmental education is being prepared to assist districts in developing their own environmental program. Contact persons designated by district superintendents were involved in regional environmental education workshops in April 1975. These workshops gave each district an opportunity to share information concerning their environmental education programs and learn of new materials and projects. Approximately 1,000 teachers and administrators have been involved in meetings or workshops in individual districts during the past year. Additional information is made available to schools through newsletters and the department publications.

Environmental Education Advisory Council

The Advisory Council for Environmental Education, organized in 1960, is advisory to the Superintendent of Education. It has two standing committees, the Education Committee and the Interagency Committee. During the past year, the Education Committee drew up a list of Indicators of Environmental Literacy. These indicators are organized according to the concepts in People and Their Environment.

The Interagency Committee, consisting of representatives from major state and federal agencies and organizations has been working on the development of a state resource index, which will include people, place, activity, and printed material available to the schools. Other committees have been formed for special purposes. A biannual newsletter keeps members informed. The Advisory Council meets twice a year, providing technical assistance and promoting the work of the Department of Education.

Publications

1. People and Their Environment - Teachers' Curriculum Guide to Conservation Education. Developed by thirty-four teachers, this set of eight guides has been published and vended by J. G. Ferguson Company since 1968. It is still popular with South Carolina teachers and is widely used.

2. The Energy Book, a 1975 publication. Cost per copy is $1.50.

3. Landscaping the Home and School Grounds (No. 1/5/79) Student Manual $1.50 and (No. 1/6/70) Transparencies $4.50.

4. Basic Forestry for Vocational Schools in South Carolina (No. 1/5/73-4) $4.00.

5. Plant Science (No. 1/6/73-4) Transparencies $14.00.

Send orders for No. 1/5/79, 1/5/73-4 and 1/6/73-4 to:

Vocational Education Media Center
109 Freeman Hall
Clemson University
Clemson, South Carolina 29631

Exemplary Public School Activities

There are many exemplary "shoestring" public school activities in Environmental Education. It is our belief that the environment can be an excellent and diverse learning resource, with or without funding. Many of our schools have used local resources for nature trail development, for various study projects and improvement programs. Six school districts are involved in the ECOS program and have developed plans for infusing environmental education into their existing curriculum. Ten or more districts have courses classified as environmental education and six have a staff member to coordinate their program. One district has an Environmental Center.

Some secondary schools in South Carolina offer as part of the total vocational agricultural education program a course in Environmental and Natural Resources Occupations. Teachers utilize a new curriculum guide which was developed by agricultural education staff members, teachers and curriculum specialists. The guide includes student objectives, learning activities, topic outlines and reference sources.

There are two environmental education laboratories developed by agricultural education students that are considered outstanding. The laboratory at Ridge Spring-Monetta High School under the direction of Francis Counts, agriculture teacher, has received state-wide recognition from the Land Resources Conservation Commission and the laboratory at Bowman High School under the direction of Mr. H. L. Beach, agriculture teacher, will be recognized as the Southern Regional winner in the National FFA's Building Our American Communities (BOAC) program. This project along with three other regional winners will be judged during the National FFA Convention to determine the national winner for 1975.

College and University Activities in Environmental Education

To determine the status of environmental education in the state, the environmental education consultant conducted a survey of school districts and teacher training institutions. The survey indicated that very few teacher training institutions provide courses for prospective teachers and at present, no college in the state has a degree program in environmental studies. Based on the results of the survey, a task force committee has been designated by the Advisory Council to consider post-high school environmental education, especially teacher training.

For the past four years a three-week institute in environmental studies for teachers has been offered at The Citadel, Clemson and the University of South Carolina. Several professors have provided special environmental education programs for local school districts. One of these has been located in nearby state parks.

Presbyterian College has a week-long workshop in the spring for all seniors in education that is conducted by various resource agencies.

Winthrop College sponsors a workshop very similar to those that are carried out by the Advisory Council.

There is a workshop conducted by the Crossroads of History RC&D Project at Camp Thunderbird in York County.

The Greenville County Teacher's Workshop, which is only for Greenville County teachers, is conducted by Mr. Brice Latham of the Greenville School District.

This summer the University of South Carolina held its first marine program for high school science teachers. Called "Special Topics in Marine Science," the class was taught by scientists from USC's Belle W. Baruch Institute for Marine Biology and Coastal Research and other departments and state agencies.

The State Board for Technical Comprehensive Education cooperates with the South Carolina Board of Certification of Environmental Systems Operators. They provide technical training in an Associate Degree Program for waste water treatment and Environmental Systems Engineering.

The Soil Conservation Service, the United States Forest Service, the Cooperative Extension Service of Clemson University and the State Commission of Forestry conduct an annual two-day Environmental Education Workshop for teachers, resource agency personnel and others, at Newberry College.

State Resource Agency Activities in Environmental Education

Department of Archives and History: Regional Historic Preservation Coordinators are working with local schools - teachers and students. Projects include inventory of buildings in the downtown area and development of a course on local history. Numerous publications are available to teachers.

Energy Management Office: A large packet of energy information has been compiled and distributed to the schools. A film library has been set up and films are available on a free loan basis. An Energy Speakers' Bureau has been organized listing fifty-eight speakers and their areas of expertise.

Department of Health and Environmental Control: Educational films are available from the Film Library and a catalogue of available films is available on request. Brochures and pamphlets have been collected and developed for various grade levels.

Department of Parks, Recreation and Tourism:

A. Projects such as school ground beautification are prevalent throughout the state. One school has an on-going gardening program for middle school students cooperating with the county committee and Clemson Extension Service.

B. The Johnny Horizon '76 kits and information were sent to every elementary school in the state.

C. The Annual Poster Contest, using an environmental theme, reaches all students, grades 1-12, in public and private schools in the state (some teachers require participation as the term project).

D. An Environmental Film Digest has been sent to many schools, listing films, available free of charge from the nine state agencies and universities.

New Horizons Development Authority: Through a grant from HEW, a concentrated environmental program was conducted in Fairfield County culminating in a week long workshop for teachers and students. "A Practical Guide for Environmental Activities" was published as an aid to teachers and scout groups.

Division of State Parks: A full staff of naturalists, biologists, etc., is available to conduct field trips for classes Training seminars and workshops are held for teachers. Talks and slide shows, with an emphasis on environmental concerns are given frequently in classrooms across the state as well as in the parks proper.

Soil Conservation Service: Printed materials are distributed in all counties through the local soil and water conservation districts. They also assist schools and help with teacher training.

South Carolina Land Resources Conservation Commission: The South Carolina Land Resources Conservation Commission has as one of its prime functions assistance and coordination to the forty-five organized conservation districts in South Carolina. Primary assistance is given through conservation speaking, essay and bulletin board contests for students in the districts.

Forty-five schools were assisted with the development of outdoor classrooms and over 130 schools now have outdoor labs on their school grounds.

Special workshops were held which reached an additional 272 teachers with our conservation message. Staff members also assisted with the Environmental Institutes.

The Land Resources Commission planned and conducted the seventh annual "Conservation Workshop for Youth" held on the Clemson University campus. This year, ninety-three high school students attended the week-long workshop. Seven college scholarships are made available by the South Carolina Association of Conservation Districts.

Conservation brochures, slide sets, and pamphlets are prepared for use by both students and adults.

South Carolina Wildlife and Marine Resources Department: A full-time education specialist is employed to work at all levels on environmental education. This person works with the State Department of Education and other state agencies in conducting summer workshops and institutes. The department provides speakers, films and printed materials to schools and interested organizations. These include the magazine, South Carolina Wildlife, recently awarded best in the nation of conservation magazines, coloring books, newsletters, and other printed matter.

One and one-half million acres of Game Management Area land is open to the public for nature study and related activities. Hunting days are staggered with non-hunting days for safety and maps are available on request.

There are six state fish hatcheries open for tours by school groups, one with an extensive nature trail.

The department sponsors two summer camps. A week-long resident Conservation Camp is in its 20th year. A Youth Conservation Corps day camp is held for seven weeks in the summer.

South Carolina Forestry Commission: The State Commission of Forestry has programs and materials especially prepared for each age group starting with first grade and continuing through the sixth grade. The programs are put on and the materials are delivered to each school in each county by the county ranger and his personnel.

These materials contain information on how trees grow, benefits of wildfire control, how to prevent and control wildfires, how forests are regenerated, etc. along with the information of the forests contribution to wildlife habitat, soil, air, water, recreation, aesthetics, etc.

Through cooperation with the Department of Education, each Vocational Agriculture class is given a unit of forestry in their general course, some special courses in forestry and timber harvesting are also a part of the program.

The Forestry Commission has foresters available to any school throughout the state to give programs, demonstrations, talks, show films, assist in setting up outdoor classrooms, teacher training programs, etc. The setting up of outdoor classrooms is usually in cooperation with other resource agencies and the Department of Education.

Other Activities

Five Youth Conservation Corps Camps were held in the state this summer involving 135 students.

Other Pertinent Information

Various county museums offer summer courses for children and arrange fieldtrips to various types of environments.

- Alice Linder
Consultant for Environmental Education
State of South Carolina
Department of Education
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September 1975

SOUTH DAKOTA

State Plans for Environmental Education

A group of citizens concerned about the environmental problems in South Dakota banded together to form an organization to assist in bringing about awareness of the citizenry of South Dakota. The Governor of South Dakota then officially named the group as the Governor's Environmental Council. The Council is not a political organization, but an organization that promotes awareness. It is self-sufficient, collecting dues from its members who represent many agencies in state government, other social organizations, and lay people concerned with the environment.

The Council's goal is to become involved in activities that promote environmental awareness through printed materials, workshops, and being supportive to other agencies. The Council has worked very closely with the Division of Elementary and Secondary Education and the State Environmental Protection Agency.

The future of the environmental awareness in South Dakota is heavily dependent upon federal funding.

Environmental Education Legislation

The Council and the Division of Elementary and Secondary Education have worked hard the last two legislative sessions in an attempt to influence the legislature and also to receive funding for programs. Neither has been successful.

Teacher Certification in Environmental Education

No requirements.

State Coordinator

The state coordination of environmental education is an added secondary responsibility of the curriculum consultant.

Environmental Education Advisory Boards

The Governor's Environmental Council (see above).

Environmental Education Publications

None.

Exemplary Public School Activities in Environmental Education

1. 500 Fathoms, Yankton High School, Yankton, South Dakota: This is a Title III mini-project to acquaint students with the world down under, with the Missouri River being the classroom.
2. Outdoor Classroom, Huron, South Dakota: The school system, with the cooperation of businesses and state and local agencies, acquired 40 acres which has been developed as an outdoor classroom for K-12.

College and University Activities in Environmental Education:

Teacher education is minimal. The Governor's Environmental Council serves as a cooperative agency between and among schools in the state.

Other Environmental Education Activities in the State

The Governor's Environmental Council supported an intern from the University of South Dakota to develop a proposal for federal funding and to do awareness workshops at the South Dakota Education Association annual meeting and other specific professional meetings.

- Delwin Carter, Curriculum Consultant
State of South Dakota
Department of Education and Cultural Affairs
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November 1975

TENNESSEE

State Plan

The final draft of the Tennessee Plan for Environmental Education has been prepared and printing should begin in the near future. The plan is primarily an organizational scheme identifying the ways that various interested groups may assist in the total environmental education program.

Copies of the plan will be available to ERIC and Environmental Education consultants in each State Department of Education. Additional copies will be mailed upon request.

Legislation

Funding for a state environmental education program offers little promise in our state. However, there appears to be some support for legislation which concentrates on a specific project or problem such as mass transit, land use, energy conservation, etc.

Environmental programs will have to be funded through existing sources of money.

Teacher Certification

None in environmental education.

State Coordinator

Mr. R. Jerry Rice, Specialist
Science and Conservation
Tennessee Department of Education
Building 309, 11th Avenue
Smyrna, Tennessee 37167
(615) 459-6941

Environmental Educatin Advisory Councils

The Tennessee Plan for Environmental Education provides for an Environmental Education Advisory Council. The Council will be activated upon direction of the Commissioner of Education and its duties as specified in the Plan.

Publications

Not applicable.

Higher Education Activities

An Energy Conservation/Education Conference was held at Volunteer State Community College on May 2, 1975.

Cooperative Efforts

Tennessee Department of Conservation
Tennessee Department of Public Health
Tennessee Energy Office

The Department of Education is field testing an energy education guide (Grades 9-12) produced by the Tennessee Energy Office in cooperation with the University of Tennessee Environment Center, Knoxville, Tennessee. Revisions should be made this year.

Other Environmental Education Activities

A proposal is now under consideration to sponsor a series of energy conservation/education workshops throughout the state. The workshops will be a cooperative effort between the Tennessee Energy Office and the Department of Education.

- R. Jerry Rice, Consultant
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October 1975

TEXAS

Since 1958, a staff member of the Texas Education Agency (TEA) has been assigned as part-time conservation/environmental education consultant. His responsibilities include serving as a liaison person with the Texas Advisory Committee on Conservation and Environmental Education (TACCEE). He also has responsibility for the development and dissemination of environmental education materials for grades K-12. Since 1973, the undersigned has served in this capacity.

In 1970 the State Board of Education adopted The Goals for Public School Education in Texas, in which a goal statement for students is related to the environment and ecology (Revised April 1973).

An Agency Resource Guide, Environmental Education: A Guide to Teaching Conservation in Texas, first published in 1964, was revised with the assistance of the TACCEE in 1972. This publication was distributed to all public school superintendents and all state libraries in Texas, and is now out of print.

The State Board of Education approved four courses in environmental science in 1972. The state-approved courses include Health Science Focus, Ecological Systems Focus, Conservation of Natural Resources Focus, and Energy Systems Focus. These courses parallel training programs in Vocational Education.

The Agency, in cooperation with the Texas Forest Service, U.S. Forest Service, education service centers, and public schools, has conducted workshops in outdoor environmental education.

In November 1973, fifty-five school districts indicated that they used outdoor sites in a natural setting for environmental instructional programs. Today, many other school districts have developed school sites for outdoor education. As a result of their interest, an Agency writing committee has developed a resource guide entitled Outdoor Education: A Guide to the Planning and Implementation of School Sites. This guide will be disseminated soon.

A tentative guide entitled Strategies for Implementing Environmental Education will also be made available soon. Workshops have been conducted in environmental education for administrators, teachers, and community groups.

- Joseph J. Huckestein, Consultant
Conservation and Environmental Education
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October 1975

UTAH

Although Utah has no comprehensive state plan, environmental education legislation or teacher certification, it does have a statewide committee that is responsible for environmental education in the public schools. The chairman of this committee is the science specialist in the Office of the State Superintendent of Public Instruction, and membership is drawn from the public resource agencies, i.e., Forest Service, Bureau of Land Management, Soil Conservation Service, National Parks Service, and the State Department of Fish and Game. Also, institutions of higher learning are represented. The committee's membership from education and from the resource agencies is comprised of personnel who, for the most part, have leadership responsibilities that extend statewide. This committee, discharging one of its major responsibilities, developed guidelines for a comprehensive environmental education program in grades kindergarten through 12.

Objectives of the Utah Environmental Education Committees are:

1. To develop a philosophical and structural framework for a statewide program in environmental education.
2. To provide educators with environmental education concepts appropriate to the various curriculum areas, K-12.
3. To assist each local school district in developing and establishing its own integrated environmental education program at all grade levels.
4. To provide opportunities for educators to learn more about the environment through in-service workshops, preservice classes, field trips, etc.
5. To assist schools in use of the out-of-doors as a laboratory by:
    a. Assisting school districts in finding lands, public and private, suitable for use as outdoor labs.
    b. Assisting schools in planning the uses of the school grounds or adjacent lands as outdoor laboratories.
    c. Assisting schools in developing nature trails.
6. To develop and maintain an up-to-date resource file and disseminate, from the file, pertinent information to local districts.
7. To assist educators in the development of instructional materials needed to implement good environmental education programs.

8. To develop procedures for evaluating the effectiveness of the many facets of the environmental education program in the state.

Advisory Committee

Members of the Utah State Board of Environmental Education Advisory Committee include:

R. LaMar Allred, Chairman	Specialist, Science and Environmental Education, Utah State Board of Education, 1400 Univesity Club Building, Salt Lake City, Utah 84111
Glenn O. Clark	Environmental Education Specialist, U.S. National Park Service, Room 2207, 125 S. State Street, Salt Lake City, Utah 84112
Vern A. Fridley	Regional Director of Environmental Education, U.S. Forest Service, Federal Office Building, 324-25th Street, Ogden, Utah 84401
Herbert H. Frost	Department of Zoology, 151 Widstoe Building, Brigham Young University, Provo, Utah 84321
Carl M. Johnson	Associate Professor of Forest Science, Utah State University, Logan, Utah 84321
David E. Lofgren	Campus Environmental Impact Officer and Director of State Arboretum, Room 2056 Annex, University of Utah, Salt Lake City, Utah 84112
Richard S. Peterson	Senior Specialist, Science Education, Utah State Board of Education, 1400 University Club Building, Salt Lake City, Utah 84111
Jack M. Reed	Public Affairs Officer, Bureau of Land Management, P.O. Box 11505, Salt Lake City, Utah 84111
Raymond E. Rhead	Director of Recreational Programs, Weber State College, Ogden, Utah 84403

L. Ray Remund	Assistant Chief, Education Section, Division of Wildlife Resources, 1596 West North Temple Street, Salt Lake City, Utah 84116
W. L. "Bud" Rusho	Public Information Officer, Bureau of Reclamation, P.O. Box 11568, Salt Lake City, Utah 84111
or	
Harold N. Sersland	Regional Environment Specialist, Bureau of Reclamation, P.O. Box 11568, Salt Lake City, Utah 84111
Charles W. Townsend	Assistant State Conservationist, U.S. Soil Conservation Service, 4402 Federal Building, Salt Lake City, Utah 84111
Lyle R. Tregaskis	Director of Federal Programs, Alpine School District, American Fork, Utah 84003

Coordination

Richard S. Peterson serves as the State Department's representative for environmental education.

Curricular Framework

A tentative environmental education conceptual curriculum framework was developed during an interdisciplinary workshop session in 1973 by classroom teachers and was published by the Utah State Board of Education. It includes a philosophy statement and major concepts in the following "spheres": Sociosphere, Biosphere, Geosphere and Energysphere.

Environmental Education Projects in Utah Schools During 1975

District	Project Title	Contact Person
Alpine	Environmental Education for All Seasons in Utah County	Mr. Lyle Tregaskis Alpine School District American Fork, Utah 84003
Carbon	Clear Creek Summer Camp	Mr. Frank Worthen Carbon School District Price, Utah 84501

Davis	The Clearfield Environmental Education Project	Mr. LaMont Jensen Clearfield High School 938 South 1000 East Clearfield, Utah 84015
Grand	Grand County Environmental Advisory Committee	Mrs. Louise Hetzel Helen Knight Elementary School Moab, Utah 84532
Granite	Granite School District Mill Hollow Center	Dr. Ronald Beckstrom Granite School District 340 E. 3545 South Salt Lake City, Utah 84115
Iron	Hidden Haven - Environmental Education Outdoor Classroom	Mr. Chester Benson Parowan Elementary School Parowan, Utah 84761
Jordan	The Jordan River - What It Has Been - What it Might Become	Mr. Glen Soulier Jordan School District 9361 S. 4th East Sandy, Utah 84070
Nebo	Hobble Creek Camp	Mr. Boyd Goodrich Nebo School District Spanish Fork, Utah 84660
Provo	Big Spring	Mr. Monroe Gallier Principal, Maeser Elementary School 150 South 5th East Provo, Utah 84601
San Juan	Blue Mountain Environmental School	Mr. Larry Bailey Monticello High School Monticello, Utah 84535
Uintah	Thunderbird Camp	Mrs. Colleen Colton Uintah High School Vernal, Utah 84078
Weber	North Fork Camp	Dr. Varnell Bench Weber School District 1122 Washington Blvd. Ogden, Utah 84404
Utah State University	Man and His Environment	Dr. Cyrus McKell Project Director Utah State University Logan, Utah 84321

- Richard S. Peterson
Specialist in Science Education
Utah State Board of Education
1400 University Club Building
136 East South Temple
Salt Lake City, Utah 84111
(801) 328-5061

August 1975

VERMONT

A state plan for environmental education, a cooperative effort of educators and non-educators, is now being written. Completion of this K-12 plan is targeted for July 1, 1976. Previous attempts at such a plan have been made, but not completed.

Vermont has no legislation specific to environmental education. There are no teacher certification requirements relative to environmental education, and none are anticipated.

State coordinator for environmental education is: John E. Stevens, Science and Environmental Education Coordinator, State Department of Education, Montpelier, Vermont 05602. (802) 828-3115

Among the coordinator's responsibilities are 500 elementary and secondary schools in science and environmental education.

The State Department of Education publishes an environmental education newsletter twice yearly for in-state distribution only.

No federal or state-funded efforts are currently operative in the public schools of Vermont. Two locally-funded efforts exist, but most environmental education activity in Vermont's schools are of the "shoestring" variety, in terms of funding.

Both Johnson State College and University of Vermont have teacher education efforts relative to environmental education. A number of other institutions of higher education offer courses in environmental education. Several efforts are being made relative to cooperative ventures in environmental education.

The State Agency of Environmental Conservation and the Department of Education are engaged in a cooperative effort to develop a K-12 program for the state. In addition, many privately-funded organizations are working to promote environmental education in Vermont.

- John E. Stevens
Environmental Education Coordinator
State Department of Education
Montpelier, Vermont 05602
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November 1975

VIRGINIA

Environmental Ecological Education Committee

The Environmental/Ecological Education Committee of the Virginia State Department of Education was appointed by Dr. Woodrow W. Wilkerson, State Superintendent of Public Instruction, in March of 1970. The aims and objectives of this committee centered around the following:

1. To evaluate and assess the needs of local school divisions in Virginia in regard to environmental education in all areas of the curriculum, Kindergarten - Grade 12.
2. To review present materials which are available for use in the public schools in the areas of environmental/ecological education.
3. To conduct surveys of local, state, regional, and national activities in the area of environmental education.
4. To develop appropriate curriculum materials and publications which give proper emphasis to a state-wide program in environmental education.
5. To maintain a professional library of materials within the State Department of Education dealing with environmental education. These materials would be available to educators in local school divisions for review.
6. To provide state and regional conferences and workshops for local educators on the topic of environmental education.
7. To provide consultative services from the Virginia State Department of Education to local school divisions interested in a program of environmental education.
8. To work cooperatively with state and local community and civic agencies interested in environmental/ecological education.
9. To encourage a broad based interdisciplinary program of environmental studies in Kindergarten - Grade 12.

Governor: Council on the Environment

On September 16, 1970, the Governor of Virginia signed Executive Order Number Eight, which established the Governor's Council on the Environment. Following Executive Order Number Eight, legislative authority was established under the Virginia Environmental Quality Act. Article 2, Chapter 17 (as amended) of the Virginia Environmental Quality Act states:

"Council established. -- To implement the policy set forth in this chapter, there is hereby established in the office of the Governor a Council on the Environment." (1972, c. 774.)

"Membership; chairman. -- The Council on the Environment shall be composed of ten members and an administrator who shall all be citizens of the State. Three shall be appointed by the Governor on the basis of merit without regard to political affiliation, subject to confirmation by the General Assembly, but they shall be permitted to serve in the interim between appointment and confirmation or rejection. They shall hold office at the pleasure of the Governor until their successors take office. The administrator of the Council on the Environment shall serve as chairman. The chairman of the State Water Control Board, the Board of Conservation and Economic Development, the Game and Inland Fisheries Commission, the Marine Resources Commission, the Soil and Water Conservation Commission and the State Air Pollution Control Board and the Commissioner of Health shall also be members of the Council." (1972, c. 774, c. 354; 1975, c. 263.)

"Compensation of members. -- The members of the Council shall receive their necessary expenses incurred in the discharge of functions as members of the Council." (1972, c. 774.)

"Meetings. -- The Council shall meet at least once every three months, and other meetings may be held at any time or place determined by the Council or upon call of the administrator. All members shall be notified of the time and place of any meeting at least five days in advance. Five members shall constitute a quorum for the transaction of business. The Council shall keep a complete and accurate record of the proceedings at all its meetings, a copy of which shall be kept on file in the office of the Council and open to public inspection." (1972, c. 774; 1974, c. 354.)

"Appointment, etc., powers and duties of administrator. -- The administrator of the Council on the Environment shall be appointed by the Governor, subject to confirmation by the General Assembly, for a term coincident to that of the appointing Governor. Any vacancies occurring in the office of administrator shall be filled by the Governor. Any vacancies occurring in the office of administrator shall be filled by the Governor subject to confirmation by the General Assembly. The administrator of the Council on the Environment shall devote full time to the duties and responsibilities of his office, which shall include the following:

(1) Developing uniform management and administrative systems which will assure coherent environmental policies and which will facilitate provision of environmental services to the public;

(2) Taking necessary steps to promote the efficiency of management and coordinate administrative practices within and among the boards and agencies of the Council including the effective use of personnel resources among the agencies;

(3) Consolidating, coordinating, and expediting the permit review process, eliminating redundant or overlapping procedures and ensuring that any formal hearings required are consolidated into one hearing for major projects, and coordinating the processing of permits where both federal and State requirements are involved;

(4) Coordinating the preparation of a joint environmental agencies' budget, containing sub-budgets, each of which shall be approved by the appropriate board or agency and thereafter submitted to the administrator who shall convey without change said budget or budgets to the Secretary and Governor for approval;

(5) Preparing and submitting annually, with the cooperation of the boards and agencies, an environmental and management report to the Governor and the General Assembly in which he shall assess in detail;

(a) The Council's success in achieving the purposes of the enabling legislation.
(b) The reasons for any failure to achieve those purposes.
(c) Any changes in legislation that the Council believes necessary to better achieve those purposes.
(d) Management actions taken in support of the enabling legislation.
(e) New environmental programs to be considered for legislative action.
(f) New environmentally related programs which should be considered by the General Assembly for transfer to another board or agency or to the jurisdiction of the administrator.

Such reports may be prepared in conjunction with the reports of the Council on the Environment as directed by 10-186.

The administrator shall employ such personnel and procure the necessary professional services to perform the duties of the office." (1972, c. 354.)

"Further responsibility and authority of administrator. -- It shall be the further responsibility of the administrator of the Council, in accordance with provisions and limitations as may be elsewhere set forth in law, to carry out the policy of this chapter. In so doing, the administrator is authorized to:

(1) Coordinate all State communications with federal agencies involving State concern having relation to environmental problems, and to call meetings as needed of heads of State agencies and other personnel to review policies and programs of mutual concern relating to environmental problems;

(2) Make rules and regulations for his own staff organization;

(3) Sue and be sued in the Council's official name;

(4) Enter into and perform contracts; and acquire in any lawful manner personal or real property or any interest therein deemed necessary in the performance of the Council's functions, and to maintain and improve such property or dispose of it when necessary;

(5) Accept and administer services, gifts, and other funds donated to the Council to carry out the policy of this chapter;

(6) Engage and pay for the services of professional consultants;

(7) Initiate and supervise research programs;

(8) (Repealed)

(9) Receive applications for, coordinate and supervise the evaluation of, multiple permits for major projects issued by individual environmental regulatory agencies." (1972, c. 774; 1974, c. 345.)

"Duties. -- It shall be the duty of the Council to implement the policy of this chapter. Specifically, the Council shall, among other things:

(1) After holding public hearings annually, throughout the State, issue a report on the activities of the Council and the state of the environment. The report shall include among other things:

(a) An assessment, updated annually, of the environmental choices and their trends and implications projected over a twenty-year period substantially affecting the Commonwealth that are made by any person;

(b) Recommendations to the Governor, updated annually, concerning the policies necessary to exert the influence of the Commonwealth to the fullest extent practicable to change the environmental choices identified in subsection (1) (a) above so as to insure, over the next succeeding twenty-year period, the wise use and wise protection of the State's natural resources to the end that a balance is achieved and maintained between environmental protection and economic well-being of the Commonwealth, such recommendation being made by coordinating to the fullest extent practicable with interested State agencies; and

(c) An assessment of the effects of State policy in ensuring that the objectives in subsection (1) (b) above are being and will be met.

Each report shall be published, issued to the Governor, and made available for purchase by citizens.

(2) Advise the Governor and General Assembly, and, on request, assist other officers, employees, and public bodies of the State, on matters relating to environmental quality and the effectiveness of actions and programs designed to enhance that quality; and recommend to the officers and public bodies of the State measures it believes are necessary to enhance the quality of the State's environment.

(3) Conduct public hearings throughout the State to give citizens the opportunity to contribute ideas regarding environmental quality; and

(4) Initiate and supervise programs designed to educate citizens on ecology, pollution and its control, technology and its relationship to environmental problems and their solution, population and its relation to environmental problems, and other matters concerning environmental quality." (1972, c. 774.)

In November 1971, the State Department of Education launched a statewide program by publishing a brochure entitled Man and His Environment which was distributed in quantity to all schools. This brochure, designed to begin building environmental awareness, centers around the questions: What is environmental education; Why is environmental education important; Who is responsible for improving the environment; and, What types of activities are suggested in environmental education?

State Plan for Environmental Education

In April 1973, the Virginia Legislature passed House Joint Resolution 198, the Senate concurring. H.J.R. 198 states:

> "Whereas, the Commonwealth has expressed concern for environmental quality and its importance to the health and happiness of this and succeeding generations; and it is therefore the policy of the Commonwealth to give constructive attention to this subject; and

> Whereas, the effectiveness of this attention depends fundamentally, on broad public understanding of the nature and capabilities of our natural resources and the demands being made upon them by population, technology, economic change and growth; and
>
> Whereas, citizens and their representatives are being called upon to make far reaching decisions on environmental matters, including land, air, and water use; energy requirements; population growth and concentration, social, economic and governmental problems bearing on the liveability of core city, sprawling suburb, and changing countryside; and
>
> Whereas, broad public understanding necessary for wise action on these matters can best be, or perhaps only be, achieved through a comprehensive and continuing environmental education curriculum in the public schools, which is not now available; now, therefore, be it
>
> Resolved by the House of Delegates, the Senate concurring, That the State Board of Education is directed to develop a plan and program of environmental education, including a comprehensive and continuing curriculum and teacher training, for use in the primary and secondary schools of the Commonwealth.
>
> The State Board of Education shall complete its plans and report on them and their implementation to the Governor and the General Assembly not later than December one, nineteen hundred seventy-three."

Responding to H.J.R. 198, the State Department published Environmental Education Guide, K-12. Distribution of the guide was sufficient for each teacher and administrator, K-12, to have a personal copy. The guide, published in July 1974, states the philosophy, objective, and program characteristics of the State plan. In addition, characteristics of children are identified in terms of environmental education implications and exemplary activities are given in various investigations which may be used at various levels.

The State Program

The State Department of Education sponsored a Three-Week Workshop in Environmental-Energy Education in cooperation with State colleges and universities during the summer of 1974. Responding to Supts. Memo No. 7034, forty-seven school divisions provided 48 participants for the program. This workshop marked the beginning of our effort to establish curriculum pertaining to environmental education in Kindergarten through grade 12 throughout the State. Participants were exposed to an array of activities associated with the interactions and diversities of ecosystems in the State of Virginia ranging from the Tropical Rain Forest to the Canadian Forest or Alpine Biome. All sessions were centered around a common goal of weighing alternatives in proper decision-making about environmental problems. Approaches used included applications in art, English, music, foreign languages, social studies, and health and physical education.

The objective of the State program is to provide teachers with guidelines, materials, and "know-how" needed for effective interdisciplinary environmental education on a continuous basis, and to assist the school division by training a person who will become the community leader in establishing high quality environmental/ecological practices.

The goal of the State program is to develop a desire among both children and adults to become knowledgable and actively involved in the preservation and improvement of the environmental and ecological balance. This goal should be accomplished through student performance objectives such as:

1. Student examines more critically those phenomena and relationships which constitute his environment.
2. Student acquires problem-solving and decision-making skills necessary to guide him in living in harmony with the environment.
3. Student develops the spirit and skills of inquiry in examining the specific and general environmental implications of human activities.
4. Student fosters a greater understanding of, and concern for, society's environmental problem.
5. Student develops a sense of civil responsibility and the awareness that his actions affect others just as the actions of others affect him.
6. Student clarifies his value of all environmental activities and decisions he has derived.

As a result of his participation in the summer workshop, each leader should return to his division prepared to organize local agencies and develop high-quality programs around Man and His Environment designed to fit the specific needs of the locality. This organization and development should result in final guidelines which are:

1. developed locally
2. interdisciplinary in nature
3. promoters of interest in, awareness of, and sensitivity toward the environment
4. activity-centered
5. participant-centered

6. future oriented

7. directed toward a universal view of the environment

Follow-up divisional workshops have been provided in many of the divisions by personnel representing all of the services of the State Department of Education. The results have been gratifying and many school divisions are moving forward with a sound program in environmental education.

During the weeks of June 16 through July 15, 1975, the State Department of Education sponsored two environmental education workshops in cooperation with Madison College and Old Dominion University. The purpose of the program was to prepare additional teachers for implementing the State environmental energy education program mandated by H.J.R. 198. Follow-up work will continue through the efforts of State Department personnel.

P.L. 91-516 Grant

The State plan is currently operating under a Federal grant under P.L. 1-516. The State is divided into seven regional study areas. During the year July 1, 1975 - June 30, 1976, the "Mobile Environmental-Ecological Teacher Training Unit" will conduct one-day regional workshops (one or more school divisions) involving fifteen or more school divisions. Workshops should involve all regional areas. Workshop coverage should reach 2850 teachers and result in environmental implementation among 58,500 students. The "Mobile Environmental-Ecological Education Teacher Training Unit" will consist of the program coordinator and twenty-five Assistant Supervisors from the State Department of Education representing the following areas: Elementary Language Arts; Elementary Mathematics; Elementary Humanities; Elementary Science; Special Education; Adult Education; Art Education; Driver Education; English; Foreign Languages; Health and Physical Education; History, Government, and Geography; Secondary Mathematics; Music; Secondary Science; Business Education; Distributive Education; Home Economics Education; Industrial Arts; Agriculture Education; Trade and Industrial Education; Community Education; and Career Education. In addition personnel from other State agencies, and local business and indus will serve as resource personnel.

The State Department of Education's Five Year Plan calls for the following student goal to be met through the objective and strategies for the State Department of Education which follow:

4. Consistent with his or her abilities, interests, and educational needs, every student will develop and utilize the basic skills necessary to function effectively.

4.4 By September, 1979, each school division will have developed guidelines and implemented strategies designed to assist students in developing a positive attitude toward and commitment to environmental decisions and energy consumption.

4.4.1 By July 1, 1975, the State Department of Education will have provided all school divisions with Environmental Education Guidelines K-12 in sufficient quantity to provide each teacher and administrator with a copy.

4.4.2 By August 1, 1975, the State Department of Education will have provided an opportunity for one or more teachers from each school division to become involved in college credit summer workshops in transdisciplinary environmental-ecological education.

4.4.3 By June 1, 1979, the State Department of Education will have provided an opportunity for all school divisions to have been involved in one-day transdisciplinary environmental education in-service workshops designed to prepare teachers for the development of local community centered environmental-ecological guidelines.

4.4.3.1 By September 1, 1975, the State Department of Education will have established plans for involving a minimum of 15 school divisions in one-day transdisciplinary environmental-ecological education in-service workshops designed to prepare teachers for the development of local community-centered environmental-ecological guidelines for immediate implementation.

4.4.3.2 By July 1, 1976, the State Department of Education will have involved at least 15 school divisions in one-day workshops. Effectiveness will be measured by (a) participants evaluation of the workshop, (b) Pre-workshop Environmental Attitude Inventory of participants and (c) a Post-Environmental Attitude Inventory of Participants to be administered one year later. The evaluation will be extended to the classroom in grades 6, 9 and 12 by administering Pre-Environmental Science Test and Pre-Environmental Attitude Inventory. Post-Environmental Science Test and Post-Environmental Attitude Inventory will be administered one and three years later.

4.4.3.2.1 By September 1, 1976, the 15 school divisions will have delineated initial guidelines for local community centered transdisciplinary environmental education.

4.4.3.3. By June 1, 1977, the State Department of Education will have provided an opportunity for 50 school divisions to be involved in one-day workshops. Evaluation will be done according to strategy 4.4.3.2.

4.4.3.4. By 1978, the State Department of Education will have provided an opportunity for 85 school divisions to become involved in one-day workshops. Evaluation will be done according to strategy 4.4.3.2.

4.4.4 By September 1, 1976, the State Department of Education will have provided all school divisions with an addendum to the Environmental Education Guidelines K-12 which delineates exemplary activities associated with the energy education aspect of environmental-ecological education K-12.

4.4.4.1 By October, 1975, a committee representing various divisions and disciplines of the State Department of Education will have provided tentative guidelines for energy education K-12.

4.4.4.2 By May 1, 1976, selected exemplary school divisions will have been involved in using the tentative energy education guidelines and an evaluation of the effectiveness of the activities will have been completed.

Teacher Certification

There is no teacher certification for environmental education and no requirement under any other certification. The Environmental Education Committee did recommend the following in its report to the State Board of Education:

> "A responsibility for providing teachers with the proper skills, knowledge, and understanding related to teaching environmental education rests in a large measure upon the colledges and universitites which train teachers.
>
> In order to fully implement H.J.R. 198, it seems imperative that those students in our colleges and universities have program content and experiences which will help them become a teacher of environmental education.
>
> In order to do this, it is recommended that by September 1, 1976, every applicant for a teaching certificate be required to have completed a course or equivalent experiences in environmental studies."

Supervisor of Environmental/Energy Education

Although the Supervisor of Environmental/Energy Education position has not been established in the budget, the duties and responsibilities and qualification of a person filling that position have been established as follows:

The Supervisor of Environmental/Energy Education will be responsible to the Assistant Superintendent for Instruction or his designated representative, and will be responsible for the following duties:

1. Assemble, review, evaluate, and catalogue environmental education and energy education materials prepared by USOE, EPA, FEO, State Departments of Education, and others.

2. Develop, update, disseminate to local school divisions instructional materials and lists of available resources and services associated with environmental/energy education.

3. Provide leadership within the State Department of Education by involving all divisions of the State Department of Education that deal with the instructional and special services programs in planning, developing and implementing transdisciplinary environmental/energy education.

4. Plan and coordinate in-service training programs for the local divisions on transdisciplinary environmental/energy education, involving State Department of Education representatives from all division and disciplines.

5. Work with teacher training institutions in developing pre-service and in-service training programs in transdisciplinary environmental/energy education which are in harmony with the philosophy, goals and objectives of the State Department of Education program.

6. Assist local school division in developing initiating and conducting community-centered environmental/energy education programs which shall involve working with industry, business, civic groups on other state and local agencies.

7. Prepare and submit a budget which will assure the operation of an effective and efficient environmental/energy program by the State Department of Education.

8. Coordinate State Department of Education environmental/energy education functions with USOE, EPA, FEO, SEO and other State and Federal agencies.

9. Represent the State Department of Education at national, regional, and state conferences on environmental education/energy for the purpose of keeping abreast of the developments in environmental/energy education in all divisions and in other states and planning programs which will be in keeping with the standards for quality education.

10. Perform other duties as may be directed by the Assistant Superintendent for instruction or his designated representative.

Qualifications:

1. Educational: Masters Degree and a minimum of five years teaching experience which shall include experience in elementary, junior high or middle school, and high school. Undergraduate and Graduate work shall include work in Biology, Chemistry, Earth Science, Physics, Ecology with heavy emphasis in the humanities. In addition, applicant should have had at least one year's experience in Education Supervision in public education, and hold a Postgraduate Professional Certificate.

2. General: Physical ability for full-time and flexibility of schedule for state-wide travel and involvement.

Currently, Charles R. Davis, Jr., Assistant Supervisor of Science, is assuming the responsibilities of that position.

Publications

Virginia State Department of Education, 1971, Man and His Environment, Richmond, Virginia, 18 pages. A brief introduction to man's relationship to his environment. His responsibilities for maintaining it are approached through such questions as; What is environmental education?; Why is environmental education important?; Who is responsible for improving the environment?; and What types of activities are appropriate for use in the environmental education program?

Virginia State Department of Education, 1974, Environmental Education Guide K-12, Richmond, Virginia, Division of Elementary, Secondary and Vocational Education, 92 pages. This guide opens depicting an introduction of Americans to environmental issues during the past decade. A description of environmental education leads to the objectives of a K through 12 program in environmental education which is followed by a list of characteristics necessary in a program to reach those desired objectives. An explanation of the composition and organization of the guide and suggestions for using the guide are included. The K-7 section gives suggestions for developing a viable program, the characteristics of children in the lower elementary grades, and identifies implication for environmental education appropriate for each characteristic. A section on exemplary investigations gives the goals, performance objectives, and suggested procedure for seven investigations.

The 8-12 section gives suggestions for administering the program and nine exemplary investigations. Goals, performance objectives, and suggested procedures for each investigation are given.

The appendix includes a section on suggested readings in environmental education. Brief annotations are provided to characterize the reference and to suggest ways in which each publication might be employed by teachers and/or students in creating locally-developed environmental investigations.

A free copy of Man and His Environment may be attained by directing your request to Charles R. Davis, Jr., Assistant Supervisor of Science, State Department of Education, Richmond, Virginia 23216.

Copies of Environmental Education Guide are available at a cost of $1.00 each through the Office of Harry L. Smith, Special Assistant for Public Information and Publications, State Department of Education, Richmond, Virginia 23216.

Exemplary Public School Activities in Environmental Education

ESEA, Title III Project COMSEP
H.B. Lantz, Jr., Director
Orange County Public Schools
P.O. Box 349
Orange, Virginia 22960

Project COMSEP (Comprehensive School Ecology Project) is an environmental program designed to make the concept of ecology not only understandable but also realistic to the citizens of Orange County, Virginia. When fully implemented, this program will make the school children of Orange County and the community as a whole more aware of the need for the conservation and improvement of the air, water, soil, and plant and wildlife populations of the area.

Major activities of COMSEP are implemented through several avenues: the formation of an environmental interpretation center of approximately five acres on the campus of Orange County High School, the creation of an ecology club at Orange County High School, in-service training for teachers in environmental education, and the involvement of the community in environmental awareness and improvement programs.

The twentieth-century student must, more than ever before, thoroughly understand the problems of human survival. He must understand how all factors of the environment relate or interact with one another since exposure to this knowledge will enhance his understanding and appreciation of the world.

Therefore, an environmental interpretation center is being developed that will lend itself to various field research activities. Using an inquiry-oriented methodology, along with pertinent outdoor laboratory equipment, students will be involved in environmental problem-solving. To disseminate this information to the community, conducted tours will be offered to various civic and church organizations.

The realization of the environmental interpretation center is due to much input from students, ecology club members, and community personnel.

Composed of over 100 students in grades nine through twelve, the Ecology Club of Orange County High School bears a large responsibility of the total involvement in COMSEP. The club is the pivotal point around which all activities revolve.

The objectives of this club are to encourage students in the pursuit of ecology and to carry out functions which will enhance their understanding of the environment. To accomplish its objectives, the club utilizes resource speakers, takes field trips, plans and implements activities in the environmental interpretation center; and works with the community in environmental awareness and improvement projects.

One of the primary activities of the Ecology Club is the developing of teaching materials for use by elementary and middle school children. These materials consist of pre- and post-tests, as well as a structured environmental education curriculum. Ecology Club members will then present the program to the elementary and middle school students, and, in actuality they will teach the subject of ecology.

A major responsibility of the Ecology Club is to enlist community support of environmental awareness. Using materials designed by them, club members take information to various civic and church organizations, thereby acquainting them with environmental education.

The Title III personnel believe that the objectives formulated for a program in environmental education should dictate the selection of content materials and classroom methodology used to accomplish these objectives. Therefore, teachers must be trained in techniques of increasing their own environmental awareness and knowledge: furthermore, they must be instructed in methods in transferring this awareness and knowledge to their students through careful selection of content materials.

In-service training is designed to prepare teachers to implement a variety of inquiry-oriented, interdisciplinary environmental programs which actively involve students: to improve desired attitudes of the student population, to raise the level of comprehension of how all factors of the environment interact, to increase student mastery of basic field research skills, and to create an aesthetic appreciation for the natural environment.

Environmental awareness and educational programs are contingent upon community receptiveness to these programs. Since attitudes can be changed through awareness and involvement, it is imperative that parents, as well as students, also display positive environmental attitudes. To these ends, an integral part of Project COMSEP is total community awareness and involvement.

The community has been an active participant in planning and developing the environmental interpretation center. Through participation in such projects as monitoring automobile emissions, recycling Christmas trees, recycling of paper, and attending ecology education sessions at night, the citizens of Orange County have demonstrated their overt support of environmental improvement efforts.

In order to maintain the most effective instructional program, continuous evaluation assumes a significant role in the ecology program; only through a thorough examination of the present can a course for the future be charted.

Evaluation procedures consist of pre- and post-tests designed to measure environmental knowledge and attitudes of students and adults. In addition, standardized achievement tests found in the County schools are used.

Subjective criteria will also be used to evaluate the program. Since the program is applicable in grades K through 12, a significant amount of feedback from parents must be considered. Subjective evaluation is also provided by community representatives, club leaders, and others who visit the environmental interpretation center and who have a knowledge of the program through course participation.

Dissemination of evaluative information is provided to students, teachers, and the general public, therefore enabling these individuals to evaluate the total program in terms of the money, time, and energy expended.

Project P.L. 91-516 Environmental Education

Mobile Environmental-Ecological Education Teacher Training Unit

Virginia State Department of Education
Director: Numa P. Bradner
Director of Secondary Education
Coordinator: Charles R. Davis, Jr.
Assistant Supervisor of Science

Description of Program:

I. Administrative Structure

Under the supervision of the Supervisor of Environmental Education the State Department of Education will involve fifteen school divisions in one-day workshops in "Transdisciplinary Environmental-Ecological Education, K-12." The program coordinator will direct and manage the daily operations of the project. The project includes in-service training and curriculum developments.

The Mobile Environmental-Ecological Education Teacher Training Unit will consist of the program coordinator and twenty-five Assistant Supervisors from the State Department of Education representing the Elementary Humanities; Elementary Science; Special Education; Adult Education; Driver Education; English; Foreign Languages; Health and Physical Education; History, Government, and Geography; Secondary Mathematics; Music; Secondary Science; Business Education; Distributive Education; Home Economics Education; Industrial Arts; Agriculture Education; Trade and Industrial Education; Community Education; and Career Education.

In addition, personnel from other State agencies and local business and industry will serve as resource personnel.

II. Program Design

The purpose of this project is to:

(a) introduce all school personnel within the school division, and local community agencies to the Environmental Education Guide, K-12, and the State plan for Community-Centered environmental-ecological education

(b) involve all participants in selected activities which may be used in the transdisciplinary approach to environmental-energy education

(c) prepare and distribute to participants additional material which will be useful in fusing environmental and energy education into their program and implementing that program

(d) help personnel begin development of the individual teacher plan for environmental and energy education which will help establish the school plan, the school division plan and the community plan and result in effective environmental-ecological activity in the classroom, the school and the community

(e) keep participants informed of activities associated with environmental-energy education

III.. Scope of the Project

The State is divided into Seven Regional Study Areas. During the year, July 1, 1975 - June 30, 1976, the Mobile Environmental-Ecological Teacher Training Unit will conduct one-day workshops (one or more school divisions) involving fifteen or more school divisions. Workshops should involve all regional areas. Workshop coverage should reach 2850 teachers and result in environmental implementation among 58,500 students.

IV. Results or Benefits Expected

(a) Immediate--Participants should be able to:

(1) Identify and suggest activities appropriate for use in their specific discipline area or grade level which are in keeping with the student objectives in the Environmental Education Guide K-12.

(2) Order these activities in proper perspective with the continuous sequential environmental-ecological educations program for his or her school.

(3) Give evidence that he or she has used those activities in the classroom.

(b) Long-Term Results:

(1) By the end of two years following the workshop each school involved in the workshop, through community involvement,

(a) shall have in effect their continuous sequential environmental-ecological education program for that community

(b) shall be able to give evidence of significant change in the cognitive, psychomotor and affective domains related to environmental-ecological concepts, attitudes, morals, and values as measured by an Environmental Science Test and an Environmental Attitude Inventory.

College and University Activities

Department of Environmental Services
Clarke Hall
University of Virginia 22903

H. G. Goodell, Chairman

The Department of Environmental Science offers both undergraduate and graduate programs focusing on the physical environment and its interaction with living systems.

Higher Education Center for Environmental Studies
1020 Derring Hall
Virginia Polytechnic Institute and State University
Blacksburg, Virginia 24061

Dr. John Cairns, Jr.

This Center agrees to coordinate environmental activities within already existing departments at the University. It also encourages environmental research and maintains an information center capable of providing various groups in the State with data needed to cope with environmental problems.

Department of Science Education
Lane Hall
Virginia Polytechnic Institute and State University
Blacksburg, Virginia 24061

Dr. Thomas G. Teates

Special courses for teachers involving environmental problems and decision-making.

Department of Arts and Sciences
Madison College
Harrisonburg, Virginia 22801

Dr. G. S. Trelawny

Special courses for teachers in Ecology and Mid-Applachian Environmental complexes and content courses in the Biology and Geology Departments which are involved with environmental principles.

School of Education
Old Dominion University
Norfolk, Virginia 23508

Dr. William R. Brown

Courses in environmental education for teachers.

Department of Arts and Letters
Old Dominion University
Norfolk, Virginia 23508

Dr. Wolfgang Pindur

Special courses in urban studies and environmental problems associated with urban areas.

Dismal Swamp Education and Research Center
Old Dominion University
Norfolk, Virginia 23508

Dr. Gerald F. Levy

Special educational programs for teachers and school children.

Cooperative Efforts

Cooperative efforts in teacher training programs in environmental education with the State Department of Education and Madison College, Harrisonburg, Virginia, Old Dominion University, Norfolk, Virginia and Virginia and Virginia Polytechnic Institute and State University, Blacksburg, Virginia.

Local Activities in Virginia

Buchanan County Public Schools
Box 833
Grondy, Virginia 24614
Mr. Robert L. Gillespie, Assistant Superintendent (703) 935-2331

Campbell County Public Schools
Rustburg, Virginia 24588
Joseph A. Berryman, Director of Vocational Education (804) 332-5161

Fairfax County Public Schools
30011 Memorial Street
Alexandria, Virginia 22306
Eugene W. Skinner, Science Supervisor Area I (703) 768-1122

Greensville County Public School
P.O. Box 1156
Emporia, Virginia 23847
Dr. Carlysle C. Crank, Director of Personnel Services (804) 634-3748

Hampton City Schools
19 Cary Street
Hampton, Virginia 23369
Dr. Joseph H. Lyles, Assistant Superintendent (804) 722-7481

Lynchburg City Schools
P.O. Box 1599
Lynchburg, Virginia 24505
Herbert A. Vitale, Science Supervisor (804) 84701457

Norfolk City Schools
Administration Building
800 E. City Hall Annex
Norfolk, Virginia 23150
Mrs. Mariana Becker, Science Supervisor

Petersburg City Schools
Courthouse Hill
Petersburg, Virginia 23803
R. Graydon DeLoatche, Director of Instruction (804) 733-7010

Pittsylvania County Public Schools
Chatham, Virginia 24531
Mr. Maxwell Bryant, Assistant Superintendent (804) 432-2761

Prince William County Public Schools
Box 389
Manassa, Virginia 22110
Gene T. Fox, Science Supervisor (703) 791-3113

Richmond Mathematics and Science Center
2200 Mountain Road
Glen Allen, Virginia 23227
R. Wesley Batten, Director (703) 262-8642

Roanoke City Schools
P.O. Box 2129
Roanoke, Virginia 24009
David W. Partington, Jr., Science Supervisor (703) 981-2876

Roanoke County Public Schools
526 College Avenue
Salem, Virginia 24143
Frank Moricle, Science Supervisor (703) 389-0861

Virginia State Department of Education

Numa P. Bradner, Chairman
Director, Division of Secondary Education
State Department of Education

Wayland H. Jones, Director
Division of Teacher Education and Certification
State Department of Education

Bernard R. Taylor, Director
Division of Elementary Education
State Department of Education

Annette Booker, Assistant Supervisor
State Department of Elementary Education
State Department of Education

Charles R. Davis, Jr., Assistant Supervisor of Science
Division of Secondary Education
State Department of Education

Clyde H. Haddock, Assistant Supervisor of History, Government, and Geography
Division of Secondary Education
State Department of Education

Lloyd M. Jewell, Jr., Supervisor of Statistical Services for Vocational Education
Division of Educational Research and Statistics
State Department of Education

Franklin D. Kizer, Supervisor of Science
Division of Secondary Education
State Department of Education

Harry L. Smith, Special Assistant for Public Information and Publications
State Department of Education

Mrs. Jerri M. Sutton, Supervisor of History, Government and Geography
State Department of Education

Edwin P. White, Assitant Supervisor of Science
Division of Elementary Education
State Department of Education

Sources of Resource Materials and Personnel

Other State Agencies:

Administrator and Chairman, Governor's Council on the Environment
Representative of the Public Sector, Governor's Council on the Environment

Commissioner, Agriculture and Commerce
Executive Secretary, Air Pollution Control Board
Director, Conservation and Economic Development
Executive Director, Game and Inland Fisheries
Commissioner, Highways
Director, Virginia Institute of Marine Science (Gloucester Point)
Commissioner, Marine Resources Commission (Newport News)
Director, Outdoor Education
State Corporation Commission, Division of Engineering
Director, State Planning and Community Affairs
Executive Secretary, Water Control Board
Executive Secretary, Soil and Water Conservation Board
Director, Virginia Energy Office

Colleges:

Madison College
VPI and State University
Old Dominion University
Randolph-Macon Woman's College
Virginia State College
University of Virginia

Agencies:

George Washington National Forest
Blue Ridge Parkway
Jefferson National Park
Seashore State Park
Virginia Forests Inc.
Virginia Resource-Use Education Council
Izaak Walton League of America - Virginia Section
Virginia Science Supervisors Association
Virginia State Parent-Teachers Association
Virginia State Cooperative Association
Virginia Association of Proprietory Schools
U.S. Army Corps of Engineers
Norfolk Naval Operating Base

Public Utilities:

Virginia Electric and Power Company
Appalachian Power
Norfolk and Western Railroad

Industry and Businesses:

American Safety Razor
Dupont

- Charles R. Davis, Jr.
Assistant Supervisor of Science
Coordinator of Environmental Education
State Department of Education
Richmond, Virginia 23216
(804) 770-2691

October 1975

WASHINGTON

The population of the State of Washington is, to some degree, of a very special mix. The native American people have a culture enriched with a reverence for natural forms and systems. The early settlers here produced families that remain to this day believing as did their forefathers that the Northwest is special and precious. Add to these people the many that are recent arrivals seeking respite from the overcrowded, polluted and denuded lands and waters of other parts of our country and you have a partial profile of the human population here. There is then a potential for a special interest and desire to manage our environments pursuant of a quality of life. This interest and desire was surely in part responsible for the appointment of the first Supervisor of Environmental Education for state programs. The position was funded cooperatively in 1968 through the Department of Natural Resources and the State Office of Public Instruction. The position has now been expanded to include three individuals: A State Supervisor of Environmental Education working through the State Superintendent's Office in Olympia, A State Supervisor of Environmental Education responsible for the northwest section of the state where most of the major programs in this field are in operation, and a Director of the Cispus Environmental Education Center at Randle, Washington - a teacher education center and comprehensive resource library of environmental education materials.

What follows is a description of state programs of environmental education as coordinated and entered into by the State Office of Public Instruction. An emphasis is placed on the description of those aspects of the programs that have been particularly successful in not only educating a wide range of students and teachers, but in involving and educating the general public as well. Special or critical operations are often underlined. This report proceeds through a discussion that revolves around four major categories: I. Priority Areas in the State Office of Public Instruction for Environmental Education, II. A Description of Other State Programs that are Special and Unique in Environmental Education, III. Special Associations Enjoyed and Maintained by the State Office of Environmental Education, and IV. Conclusions and Recommendations.

I. PRIORITY AREAS IN STATE OFFICE OF PUBLIC INSTRUCTION FOR ENVIRONMENTAL EDUCATION

Emphasis areas in curriculum development and implementation have been forged by the needs identified in local and national fields, by the state plans for environmental education and by direction of the State Legislature. Certainly the issues evolving around land use, pollution, population and resource depletion within the region, as well as the nation and the world, gave momentum to planning of curriculum with individual schools and state programs. Individual district programs received support from the state supervisor in matters of goal development, planning and teacher training. At the same time the State Office of Environmental Education continued its efforts in the development of curriculum programs in areas of special importance.

Pilot K-12 Program

Senate Concurrent Resolution #12 required that the Environmental Education Office develop a state model K-12 pilot program. This was achieved by applying with a selected school district (Edmonds, a district with a long history of skill and interest in environmental education areas) for Environmental Education funding from the appropriate federal funding office. Once these monies were granted ($42,000), planning and implementation were undertaken in 1972. This model is now in the process of becoming a comprehensive K-12 interdisciplinary environmental education program that may be adopted by any district or school in the state.

Population

Within the legislative mandate of SCR #12 was a requirement for the development of a pilot program for the teaching of population concepts to secondary students. A total of $10,000 was allocated by the state for development of such a population program for 7-9th grade science students. A part-time coordinator was hired, teachers from four districts selected and the pilot initiated. A pre- and post-test were developed to test student attitudes and knowledge on basic population issues. A simulation game and task activity cards were also completed and there was a revision of the population education handbook for the state. The pilot was completed in the spring of 1974 and the results are being integrated with new and existing curriculum throughout the state.

Energy

Beginning in 1972 energy education has received major emphasis by the Environmental Education Office. Generously supported by business and industry, the program efforts work toward the balanced and objective examination of environmental issues related to non-renewable resources (energy) through formal educational programs. This program has been formally referred to as *Energy and Man's Environment* and aims at both curriculum development and teacher training. The long-term consequences of the program will be to *encourage and support the development of knowledgeable citizens who can intelligently participate in making critical decisions regarding non-renewable resources*. A total of nearly $300,000 has been directed to this program by industry (power and energy associates) and it is now supported by seven state departments of education and all the electric utilities of the Pacific Northwest, including members of the Public Power Council and the Northwest Electric Light and Power Associates.

In addition to this program the Superintendent of Public Instruction's Office has provided monies through ESEA Title V for the development and printing of "Energy Awareness" reference booklets entitled *Create Tomorrow...Today* for the teachers of the state.

The Superintendent of Public Instruction and the Governor co-sponsored "Energy Awareness Week." The above curriculum activity booklets were distributed to every two teachers in all the schools of the state. A motion picture was produced (A Thousand Suns) and a television in-service program was provided as necessary background for teachers and students.

Washington has participated with Colorado, Massachusetts, North Carolina, and Iowa at the Policy and Operational level in the USOE-sponsored Inter-state Energy Conservation Leadership project for two years.

Land Use and Urban Environmental Study

Another priority of the Environmental Education Office has been the development of a guide for the study of the Northwest region with its very different physical environmental types. At the same time students and adults need a guide for study and decision making that deals with the urban environment of the Northwest. To achieve these ends a modest grant of $3,500 was awarded the Office of Environmental Education by the Western Regional Environmental Education Council. These ESEA Title V funds have produced a document entitled Encounter with the Northwest Environment -- Natural and Urban. This document was produced by the partial writing and full coordination of the Office of Environmental Education and the knowledge and composition skills of selected graduate students at the University of Washington. The catalog has been piloted in school districts and used as an instructional guide for teachers. It is intended that this guide serve not only school age students, but will be used by adult "students" of all ages and circumstances. To achieve these ends, the information has been and will be presented to adult professional and service groups and has been shared with other state and federal agencies that will make it available to their public contracts.

It is further intended that this document will serve as an instructional guide for students traveling to and from Cispus Environmental Education Center. Since the document describes the major land and water forms in the northwest and discusses their uses by a variety of life forms, including the human, it will serve as a valuable means by which all may better consider the inherent trade-offs when interacting with a particular environment.

Cispus Environmental Center

Formerly a federally operated Job Corps Center, Cispus is now leased from the Forest Service by the State Office of Public Instruction. Lloyd Rowley is the director of Cispus and Dennis Jablonski is the assistant director. It is intended that the Center be used in an exemplary manner for program development and teacher training and since 1969 the Center has been doing just that. It also operates as a location for resident environmental programs for districts and schools from throughout the state. The following are some of the specific accomplishments attributable to Cispus operations:

- General guidelines for resident environmental programs have been developed and are in use by many school districts within the state.

- An evaluation plan for resident environmental programs has been constructed, tested and implemented.

- An evaluation plan for teacher training workshops has been developed and field tested.

- A state resource center for Environmental Education media has been established and collected through ESEA Title II, State and Environmental Education Act funds, and is housed at Cispus. It is one of the most outstanding collections to be found anywhere in the nation. The collection was prepared for use by educators in our state.

- The Center is the base of the training of resources management personnel. Since its operations began in 1970, over 500 resource agency personnel have been trained as consultants to provide technical assistance for developing school and community programs in our state.

- Programs outside of "traditional" Environmental Education have been successfully operated and include, among others: Music in the Environment, Student Dropout Program, Special Education, Underprivileged Environmental Education through ESEA Title I, Environmental Education for High School Indian Students, a two-day kindercamp, and Youth Conservation Corps programs.

- The development of inter-agency cooperation in the program and facility development at Cispus including U.S. Forest Service, Soil Conservation Service, Department of Natural Resources-Geology, University of Washington College of Forestry, Department of Game.

- Teacher training (both pre-service and in-service) programs developed cooperatively between Office of the Superintendent of Public Instruction and state colleges. Some of these programs developed through cooperative submission of proposals and funding.

- Since June 1970, to date the Center has provided support service and program assistance for over 7,000 users each year. More than sixty school districts have been represented at Cispus and used the facilities in depth.

Northwest Environmental Education Center

As a necessary complement to the Cispus Center located in the southwestern portion of the state (and including forest foothills and western Cascade forest types), a center located in the northwest which includes the marine environment is important. This site is leased from the State Department of Natural Resources and is located on Whidbey Island in Puget Sound. There are no resident facilities to manage, but students using the site may experience both marine environments and forest management responsibilities.

The Environmental Education Supervisor for the Northwest Section has the responsibility for the management of the center, but his work also includes the: (1) establishing of field teacher-training programs in environmental education, (2) assisting in curriculum development for site use, (3) the evaluation of environmental education programs and (4) the securing of continuity and trust among those various agencies, schools, etc., that participate, or wish to participate in these environmental education programs.

The use of the Northwest Center is along a smaller scale than that of Cispus, but is in many ways comparable. The supervisor, however, ranges the field as the demands of this very busy section of the state require.

Edmonds School District K-12 Curriculum Development and Implementation Model

A model for a state plan for environmental education now exists for the State of Washington. It is a program that any school district may adopt wholly or in part. It is based on behavioral objectives that are consistent with the State Goals for Education and the State Guidelines for Environmental Education. The framework of this plan permits addition of new activities and information on environmental issues. It is, therefore, an ever-expanding plan that may revise, edit and update its curriculum content. As an example, plans are now underway to integrate our "energy" and "population" curricula with that of the Edmonds program.

The program has become part of the regular Edmonds curriculum offerings and new teachers are in-serviced in the use of these materials. An individual coordinator is responsible for its smooth and orderly operation in the district.

Resources

One additional priority should be added: Resources. The Northwest is blessed with water, air, and natural resources that are more specific, such as forest, fisheries and minerals. Every attempt is made to give treatment to the resources in the curriculum materials we develop. Encounter with the Northwest Environment, mentioned above, gives particular emphasis to resource consideration and those agencies responsible for proper management. There is also emphasis given to expanding the definition of what a resource is and that there are different ways of using them that range from consumptive to non-consumptive and active to passive.

Project Learning Tree deals with the forest as a resource and is based on a cooperative working relationship between industry and education. Each sector contributes its exclusive resources to the common goal of improved resource understanding. The result is an educational effort which neither education nor industry has demonstrated an ability to accomplish independently. Begun in Washington in 1974, Project Learning Tree is now supported by thirteen state departments of education and the American Forest Institute, as well as local industries.

Project Learning Tree, like Energy and Man's Environment described above, bases its program on two fundamental principles:

1. Its efforts are designed to produce original, easily used teaching materials. At the present time, there is an absence of appropriately designed resource-related materials for classroom use. Those which do exist are often single purpose or present extreme points of view.

2. A teacher training program is being developed to help classroom teachers understand the complex nature of natural resources and to assist them in developing new instructional skills for factual and objective presentation of critical concepts to their classes. This component focuses specifically upon the established fact that material, no matter how well designed, will not be adopted for classroom use unless it is carefully and systematically introduced to the teacher.

II. A DESCRIPTION OF OTHER STATE PROGRAMS THAT ARE SPECIAL AND UNIQUE IN ENVIRONMENTAL EDUCATION

Currently there is an expanding base of environmental education programs that have become a permanent part of school districts throughout the state and possess distinguished and purposeful qualities. These programs have been guided by citizen advisory councils and have had a continuous contact with the communities they serve and operate within. There has been state participation in these programs in the form of advisory, planning, evaluation and printing support. The state office has promoted exchanges of information and coordination of programs.

1. Project U.S.E. (Urban-Suburban Environmental Education) involved Bellevue and Seattle public schools and currently has an ongoing environmental education program for fifth and sixth graders that includes ecology, land use and pollution units with an emphasis on energy. The project has a significant social goal - that of bringing together urban and suburban youths of different ethnic and socio-economic backgrounds. They join together in the study of a common environment, learning more about themselves in the process.

2. Mt. Vernon Environmental Education Project is, like Project U.S.E., a federally funded program. The learning activity packages based on behavioral objectives are available to the teachers of the district. The Environmental Center

on the high school campus continues to be operational and open to the students for use of the high quality resources available on the environment. Both Project U.S.E. and Mt. Vernon Project have made considerable use of the communities they serve. Their advisory committees helped formulate the goals and objectives for the program. It is this community input that seems to be a force in insuring continuation of the project once the federal monies have been exhausted. The state's input and support also has helped in the perpetuation and maintenance of such programs.

3. Highline School District Project Ecology has designed and maintained an air pollution monitoring system throughout the district. Students are also given exposure and work experience in those professions responsible for the control and management of our environment. Some seventy activity units, lasting from two to four weeks, have been developed, evaluated, and validated. These activities are interdisciplinary in nature and range from kindergarten through high school. They are based on behavioral objectives that are consistent with the district goals and objectives. Particular care has been taken to involve the community both from the standpoint of citizen input for direction and emphasis, but also using the unique resources including the airport (zoning, noise, air pollution, etc.), creeks and freeways. Throughout the year teachers are in-serviced in the use of the curriculum materials and continuous updating and revising of packets are undertaken.

4. Shoreline School District has attempted to incorporate Encounter with the Northwest Environment into its regular summer school program. (See above.) A bus from the district is used and some sixty students and teachers travel together for two weeks examining the environmental types, considering the levels of use or impact that is placed upon them. There is discussion of the "tradeoff" involved in using any environmental type from flood plain to desert grass land. A look is given to those agencies which are responsible for the management of those environments and the laws established for their protection. A final portion of the two-week period is given exclusively to urban environmental study and again the state catalog is used. City transit and facilities are used exclusively so the students will develop confidence in the use of their urban centers.

5. The State Office of Environmental Education is currently working for the acquisition of farm land in King County that will then become available for use by all the school districts within the ESD #110 (Educational Service District including the major urban and suburban centers in Washington State--Seattle, Bellevue, Kirkland, Mercer Island, etc.). These 400 acres will be managed as an

environmental and agricultural field center wherein students will gain experience in the management of lands and water, crops and livestock as a part of life support systems. Christina Peterson is the manager of this low-net-energy environmental farm project.

It is anticipated that this will be an environmental farm which will provide quality experience in recycling, crop rotation, composting (controlled and experimental crops with and without fertilizers or use of pesticides), marketing, etc. It is also anticipated that this farm will be, at least in part, self-sustaining from sales and school district commitment.

A small operational grant from the USOE/EE office has allowed the development of teaching materials and a teacher education program for an interdisciplinary treatment of the relationships between energy and all aspects of agricultural food production.

Given the limited farm land in western Washington and the recognition that the wise use of such is critical to the health of any human population, this seems to be a truly significant program in the building stages. Career education, agricultural education and vocational education have combined efforts with environmental education for this undertaking.

6. In addition to the above, there is now underway a community-wide program that is to be engineered by the Auburn School District, south of Seattle. It will have an agricultural component in the Green River Valley, wherein the district is located, which has been put to a variety of uses which have created considerable conflict and controversy that is of an environmental nature. Land and water use questions will be better answered with the school district's commitment to environmental education on a community-wide basis. Business, industry, the Indian community, as well as a variety of regulating agencies from State Game to the Soil Conservation Service and County Parks, are working together here.

   For success of the program, community commitment is critical. In this respect it will be like other district programs and work across the disciplines and throughout the grade levels. (The Shoreline School District McAleer Creek Restoration Project included seven schools K-12 and over 700 students in a six-month project that restored a community environment and restocked a salmon run.) It is expected that students will be involved in restoration and future sound management of Green River Valley.

7. Project ERCSA (Environmental Resource Consultant Support Activity) has as its purpose the development of resource agency consultant training materials and a policy model for

agency support of Environmental Education. It is a further example of a successful attempt to bring the various agencies responsible for the environment together for exchanges and agreement on policy and direction. A document entitled SATISFICE has been produced, illustrating both the model policy plus rationale and a basic illustration of program development support procedures for resources management agencies.

8. Outdoor environmental education resident programs are pervasive throughout the state. The concentration is at the 5th and 6th grade levels with students going to a resident facility (usually within easy driving distance from the school, often at a state or city park with overnight facilities) for a period of three days to a week. Here valuable social skills are developed and emphasis is on basic ecology and field identification, but they often involve units in art and music and the environment as well as units in survival. There are virtually no school districts in Washington without some complete or partial program in outdoor environmental education.

III. SPECIAL ASSOCIATIONS ENJOYED AND MAINTAINED BY THE STATE OFFICE OF ENVIRONMENTAL EDUCATION

One of the most productive and purposeful parts of environmental education operations in Washington has been the special communication and mutual support enjoyed with a side range of agencies, associations, colleges and universities, business and industry. All are pursuant of environmental education and some have already been mentioned above under "Priorities."

State Agencies

Periodic meetings are held between agencies for purposes of updating one another on programs and also jointly formulating environmental policy. Of the numerous agencies that the environmental education office has associated with, the following have been more closely connected than others:

State Game Department has demonstrated both interest and action in environmental fields. State Game Department lands are used for study purposes by the schools as are the Department's guides, regulations and statistics. A full-time position dealing with such environmental education matters is now staffed by Russ Hupe.

The Department of Natural Resources was responsible with the Office of the Superintendent of Public Instruction for the establishment of the position of Environmental Education Supervisor. Numerous programs have been co-sponsored with the Environmental Education office, including the Northwest

Environmental Education Center, Forest Fire Education and Arbor Day Recognition.

The State Parks and Recreation Commission has had a long association with the public schools, as schools throughout the state use the parks for their resident school programs. The Environmental Education office has developed the Encounter with the Northwest Environment, in part, around the use of state parks that are located in the environmental types of the region. Schools schedule the use of the parks through the Environmental Education office, contributing to a particularly warm and helpful relationship with the State Parks agency.

Department of Ecology is, of course, a natural association for the Environmental Education offices. The state litter control, solid waste and shoreline management programs have been coordinated with the schools. The Department's information booklets describing environmental laws and regulations are integrated with environmental education curricula for the schools.

Office of the Governor has co-sponsored the state-wide "Energy Week" with our office. The Governor has cooperated on every occasion with those school pilot programs wishing to confer with his office. The support given to environmental legislation in general by the Governor has certainly been a supportive force for environmental education.

Office of Emergency Services has coordinated its efforts in energy education with the Environmental Education offices.

Federal Agencies

U.S. Forest Service has had a rich recent history in the development of selected environmental education curricula. This agency, through some of its energetic and skillful personnel, has participated in or provided numerous teacher training programs in the state. The Cispus Center is leased from the U.S.F.S. and they regularly participate there in environmental education training programs for teachers as well as other agency personnel. Their materials have been integrated into portions of our state pilot curriculum (Edmonds K-12).

National Park Service representatives have continually shown an active desire to support and help develop school programs. Throughout Washington their NEED program has been used in workshops and also served as one approach to the use of Encounter with the Northwest Environment catalog.

U.S. Environmental Protection Agency: It is obvious that an understanding of federal as well as state regulations relating to the environment is an important part of a student's preparation for positive citizenship. An effort is made to attend hearings and receive information regarding rulings and policies.

Army Corps of Engineers: Here the Environmental Education office has provided some input on unique sites and populations of wildlife that has been incorporated into their publications on Special Land and Water Areas in the region.

Soil Conservation Service is regularly represented at local and state meetings dealing with environmental education program development. This agency has a history of commitment for participation in such programs.

Federal Energy Administration personnel have consistently assisted with energy-related education programs for teachers and administrators.

Associations

Western Regional Environmental Education Council. Washington is participating with twelve other western states in this council. This has provided an opportunity to share data, as well as share in the development of other states. Participation in the council is funded by a ESEA Title V grant to the State of California, Department of Education. One representative of the State Department of Education and one person representing the resources management agencies of the state are delegates to this council from each of the thirteen western states. (See.Colorado report for more detail).

Washington State Federation of Garden Clubs has contributed valuable curriculum materials for public school use. They have also solicited contributions from industry for teacher scholarships in environmental education.

Washington State Environmental Council is a very active public organization which generates purposeful legislation for protection and management of the Northwest environment. It also plays an important role in providing public information on the subject of the environment. The Environmental Education office provides this body with periodic reports which in turn are disseminated to their memberships.

Washington Education Association has curriculum committees which have traditionally supported environmental education through both legislative momentum and monies for curriculum development.

Nature Conservancy has on occasion worked closely with the Environmental Education office in the identification and securing of lands that are of unusually significant value for environmental education purposes, i.e., eagle wintering habitat, Point Coleville and Ice Berg Point marine environments.

Seattle Audubon Society has provided teacher scholarships to Audubon Camp programs having ecology program offerings.

Association for Environmental and Outdoor Education is a regional association of educators that offers quarterly workshops and can brief teachers directly on state activities, directions and priorities.

Environmental Education Forum is a body within which all the above-mentioned agencies have affiliation and input and is important as a means for synthesis and exchange from throughout the state.

Zero Population Growth has provided input and leadership for the state's programs in population education.

Special Media

KING Television has had a long history of dealing with public education on environmental issues. They have solicited and gladly received input from the Environmental Education office. Their special production of three years ago, "The Eighth Day" has been used in the schools, in addition to its generation of community "discussion groups" that explored the information presented on each program. The station's productions of timely environmental subjects are utilized by the schools. Their current series, "People Power" (often dealing with environmental subjects), has a study guide that is sent out to all the schools within the viewing area of the station. In this programming the public is asked for their opinions, expectations and attitudes on environmental issues. Follow-up meetings are held for positive action on the issues explored.

KCTS, the Public Broadcasting affiliate on the University of Washington campus, has had a series of programs dealing with environment. "The Best of All Worlds" and their "People at Work" series for elementary students throughout the region were developed with the input of environmental education specialists. This station has also assisted in the production of a program on energy to support our "Energy Awareness" week.

Motion pictures and slide programs have been developed to augment above-described programs in energy and Environmental Encounter. The motion picture A Thousand Suns was produced by the Environmental Education office with an accompanying study guide to be used for both public school and general public education. Current budget has monies for the production of a film to complement the Encounter with the Northwest Environment publication.

Publications in the form of special newspaper issues have been used, such as that of the Seattle Post Intelligencer wherein comprehensive treatment was given to the subject of energy and its issuance timed to correspond with "Energy Week" in the public schools.

Colleges and Universities

Huxley College at Western Washington State College has a singular interest in all matters environmental. The Environmental Education office has worked closely in teacher education with the planning and offering of over 25 special in-service courses on all aspects of environmental education. The offerings have always been timely and regionally oriented. At all times associated agencies have been involved in the course content, and coordination with other state programs has been emphasized. Mutual support approaches have continually been explored and both intern positions and teacher scholarships have been provided for the college students.

Also at Western Washington is the Science Education Department that has participated in environmental education programs and was instrumental in developing population education programs for teachers.

Both Huxley and Science Education have utilized the Whidbey Island Northwest Environmental Education Center and were instrumental in supporting and securing a Northwest Environmental Education Supervisor.

University of Washington -- Institute of Environmental Studies has provided a very productive relationship with the Environmental Education office. Teachers have been involved actively in the Institute Conferences (Growth and the Quality of Life in the Northwest); together the offices have worked with other agencies and representatives of the Media (KING-TV, People Power and Energy). Teachers participate in these offerings through the University's Continuing Education Offices and may receive either professional district credit or apply for academic credit. The College of Education, Forestry and Department of Zoology have also been cooperatively involved in Guidelines and curriculum development.

Eastern Washington State College has through its representatives and programs cooperatively taken an active part in some aspects of environmental education. Western and Eastern have cooperated in the development of a teacher education program to be initiated at the Cispus Environmental Education Center.

Central Washington State College has initiated some of its major efforts in environmental education in company with the State Office of Environmental Education. Its teacher training program in this area has centered on the use of Cispus Environmental Center where their interns have been involved in curriculum development, case studies, and actual contact with youngsters at the Center for environmental education experience. Proposals sent out for funding under the Environmental Education Act have often been sent out with the support and involvement of the State Office of Environmental Education.

Whitworth College, a private institution, has taken leadership in the Spokane area for the development of curriculum materials and teacher education courses which prepare teachers and students from the public schools to use their "Ragged Ridge" environmental education site in the eastern portion of the state.

Community Colleges are now the focus of a thrust for greater public education in the communities. Since the Environmental Education office has involved many of their skilled staff in our program development and teacher training programs, a good relationship has been struck. The public education emphasis will be on environmental issues that are particularly current.

Washington State College has been kept abreast of the programs in the state public schools and their staff has been involved in the curriculum development and in-service programs offered the teachers of that area on the subjects revolving around energy.

The Evergreen State College has shown state-wide leadership in the training of students on environmental planning, measurement and inventory. Their case studies and energy use experiments are classic, and widely used. Their interns have worked in the Environmental Education office, the public schools have used their resources and a number of faculty members have participated in curriculum development and teacher education opportunities.

Business and Industry

Some excellent communication and productive associations have been established with members of the business and industrial community. Some of these associations have been described above (Energy and Man's Environment and Project Learning Tree) but there is more that should be mentioned.

It should be noted that contact for the initiation of the above programs was made to the Environmental Education office through the independent consulting firm of Education Research Systems, Inc. They coordinated the funds as they were applied to the development of curriculum and the in-servicing of teachers. The Environmental Education office selected teachers and leaders for curriculum development. The in-service programs were presented by experts in the fields from both education and industry. These business and industrial communities have regularly been encouraged to participate in the in-servicing of teachers in other programs as well. The several energy and power affiliates have generously provided monies for the development of teaching materials and also their considerable skills on the subject of energy as well as the forest.

At all times it has been emphasized that a fair and balanced presentation of controversial material was the rule and that educators would make decisions for education in the public schools. Business and industry agreed with and strongly supported this position.

Some of the most active associations include the following: Reynolds Aluminum, Puget Power, Metro Transit, Metro Sewage Treatment, Seattle City Light, Weyerhaeuser Company, Simpson Lee Timber Company, Northwest Glass, Boise Cascade, Crown Zellerbach, Scott Paper, St. Regis Paper Company, Washington Forest Protection Association, Northwest Public Power Association, and Northwest Electric Light and Power Association.

Conclusions and Recommendations

The preliminary Washington State Plan for Environmental Education continues to provide direction for our endeavors. While the plan is limited in both development and scope, most activities and relationships are provided for by the general emcompassing nature of the document. No stipulation for special Environmental Education teacher certification is noted in either the plan or state statute, nor is such a provision anticipated.

Within the State Office of Public Instruction it has been found to be critically important to maintain and promote working relationships with supervisors in other fields. It would seem obvious that science and social studies would have goals consistent with environmental education, but the new avenues available through music, art, languages, English and mathematics are more than numerous. An important working relationship has been established with both career and vocational education supervisors as the field of the "Environment" requires specialists willing to devote their professional lives to some aspect of environment.

What has been presented here is a general description of the network that exists and is essentially the web of action for environmental education in Washington state. Interdependency is surely the key term for the successful functioning of public schools. This report should suggest the nature and depth of the interdependency.

It seems important to emphasize that no educational program can stand independent of those components in the real world. Washington environmental educators have found that the successes achieved were a direct result of dealing with this real world. Frustrating and perplexing as this involvement may be, it has its payoffs and they have been described herein. What is more important is that the students of the common schools are being prepared realistically to face their roles as citizens in a democracy that requires informed decision making.

Any particulars, or details of the above mentioned projects, relationships and materials will be provided upon request to the appropriate individual named below.

- David Kennedy
  Supervisor of Environmental Education
  Office of Superintendent of Public Instruction
  Old Capitol Building
  Olympia, Washington 98504
  (206) 753-2574

- Tony Angel
  Supervisor of Environmental Education
  Northwest Section
  ESD #109
  100 Crockett Street
  Seattle, Washington 98109
  (206) AT4-3660

- Lloyd Rowley, Director
  Cispus Environmental Education Center
  Route 4
  Randle, Washington 98377
  (206) 497-7131

November 1975

WEST VIRGINIA

State Plan for Environmental Education

The State Department of Education has a paper on Environmental Education and a continuing interest in expanding this to incorporate and coordinate efforts throughout the state. Recent events in states which have adopted the State Master Plan concept have caused many critical questions to arise. The essence of the many questions is: with the knowledge available in these rapidly changing times, is it possible to generate a viable plan which provides real guidance without creating an albatross to hang around the necks of future leaders? Since the answers are so dependent upon a close analysis of the status of the Environmental Education, we have moved into the analysis phase. This analysis is necessary for the development of a sound Master Plan. Therefore, it is not perceived to be an alternative replacing commitment to the Master Plan concept, but a sensible foundation needed for critical decision-making.

Environmental Education Legislation

None is anticipated.

Teacher Certification

Our concept of environmental education is much more than a course; it is infusion into all courses. Therefore, rather than creating a position entitled environmental educator, environmental concepts have been written into the required competencies for various certification endorsements.

State Coordinator

Environment and Energy related programs are under the supervision of the Curriculum Development Specialist-Science.

Environmental Education Advisory Board

The West Virginia Conservation Education Council serves not as an advisory board, but as a coordinating council for organizations and agencies within the state.

New Publications

"Energy Activities in the Classroom"

Exemplary Public School Activities

"Outdoor Sciences, Awareness and Appreciation"
Richard Beck, Coordinator
Doddridge County Schools
West Union, West Virginia 26456

A special emphasis project designed to move the classroom beyond the four walls and the 9:00 to 3:00 time frame by providing field trips, night walks and camping experiences.

"Opening the Outdoors to Learning"
Everett Barnett
Barbour County Schools
Philippi, West Virginia 26416

An elementary school project designed to develop an exemplary outdoor learning environment.

"Open Their Eyes"
Lloyd Farnash
Parkersburg High School
Parkersburg, West Virginia 26101

A series of outdoor enrichment activities that vary from two-hour to twenty-hour outdoor lessons. The lessons open students' eyes to their immediate environment and then contrast those river bottom experiences with mountain and cave experiences.

"Youth Conservation Program"
Maxine Scarbro
Department of Natural Resources
Charleston, West Virginia 25305

This the fourteenth year of this program which awards hundreds of young people annually for their club activities in environmental improvement.

"Tree Sense"
Loa Martin
Sunrise, Inc.
746 Myrtle Road
Charleston, West Virginia 25314

Preschool through second grade classes become "adopted" by a neighborhood tree as they learn about nature. The tremendous success of Tree Sense has prompted Sunrise to create two additional nature programs; "Sense-Mobile" and "Snake Talk".

Other localized involvements are continuing in almost every school system in the state. For example, the first step in one county's building program was to purchase a 314 acre tract which would be suitable for outdoor education.

- Robert Seymour
Curriculum Development Specialist-Science
State Department of Education
Capitol Complex
Room B-318, Building 6
Charleston, West Virginia 25305
(304) 348-2791

November 1975

WISCONSIN

State Plan for Environmental Education

A state plan for environmental education, formulated by the Wisconsin Environmental Education Council, a state agency created by Executive Order of the Governor of Wisconsin, was approved December 1974 and published 1975. It (1) identifies potential participants (sectors) in environmental education programs, (2) identifies six priority areas, assigns responsibility for programs meeting each priority, and suggests some activities to be carried out to meet each priority, and (3) suggests activities for each of eleven sectors identified in plan. It currently is in the implementation stage, but lack of funding makes implementation questionable.

Environmental Education Legislation

Current legislation: Statutes exist which require:

1. teacher training institutions, elementary schools and high schools to offer instruction in the conservation of natural resources;
2. that social studies and science teachers have instruction in the conservation of natural resources;
3. allow school districts to acquire land for school conservation camps.

Anticipated legislation:

1. updating of existing statutes to reflect environmental education influence (A copy of Wisconsin Statutes Related to Environmental Education - 1975 is appended to this report);
2. establishment of the Wisconsin Environmental Education Council, which now exists by Executive Order, by legislation.

Teacher Certification

1. Science and social studies teachers must have "adequate instruction" in the conservation of natural resources in order to be certified.
2. A committee is working on the specific requirements for a Broad Field Environmental Studies certification category which would include (1) a minor in a subject area,

(2) a minor in environmental studies, and (3) additional course work in either area. This proposed minor would be broadly multidisciplinary in nature.

State Coordination

David C. Engleson, Consultant, Environmental Education, Department of Public Instruction, 126 Langdon Street, Madison, Wisconsin 53702, (608) 266-3319 works with public schools, universities, and other state agencies in developing and implementing environmental education programs of all types.

David Walker, Executive Secretary, Wisconsin Environmental Education Council, 610 Langdon Street, Madison, Wisconsin 53706, (608) 263-3327.

Environmental Education Advisory Boards

The Wisconsin Environmental Education Council has an Advisory Committee consisting of representatives of various sectors of the public involved in environmental education.

The Department of Public Instruction is in the process of establishing an Environmental Education Curriculum Committee which will advise the State Superintendent and Environmental Education Consultant on matters concerning environmental education curriculum and other topics.

Environmental Education Publications of the State Department of Public Instruction

The following publications may be ordered from Publication Sales, Department of Public Instruction, 126 Langdon Street, Madison, Wisconsin 53702:

1. Aesthetics in Environmental Education, #5500, $2.00.
2. A Conceptual Approach to Art Curriculum Planning, K-12. #184, $1.00.
3. Ecology and Human Values, #3171, $.75.
4. French Ecology Packet, #3191, $.50.
5. German Ecology Packet, #2474, $.75.
6. A Guide to Science Curriculum Development, #161, $1.50.
7. Knowledge, Processes and Values in the Social Studies, #185, $1.00.

8. Pollution: Problems, Projects and Mathematical Exercises, Grades 6-9, #1082, $.50.

9. Spanish Ecology Packet, #4380, $1.00.

Exemplary Public School Activities in Environmental Education

Under ESEA, Title III:

1. Master Plan for Environmental Education, Nancy Noeske, Milwaukee Public Schools, P.O. Drawer 10K, Milwaukee, Wisconsin 53201, (414) 475-8093 (K-12, urban).

2. Project MEE, David Schiotz, Gottington School, Menomonie, Wisconsin 54751, (715) 235-4591 (K-12).

3. Project ICE (Instruction-Curriculum-Environment), Robert Warpinski, Director, Project ICE, 1927 Main Street, Green Bay, Wisconsin 54302, (715) 468-7464 K-12, regional, nationally validated).

4. Project LEAF (formerly SPICE), Karel Cripe, Monroe Elementary School, 55 South Pontiac Drive, Janesville, Wisconsin 53545, (608) 754-0271 (K-1, integrates environment, language arts, science).

Under P.L. 91-516: None.

Others:

Federal Funded (NDEA Title III-A)

1. Regionalized Environmental Education: This project has more than twenty stated objectives which together try to promote environmental education throughout the Agency. Included are the study of local issues and their relationship to national and international issues, familiarization with environmental education materials, stimulation of inservice education activity, and program development. A staff person will help teachers and other staff to become familiar with materials and techniques. Melvin O. Bollom, CESA 14, 860 Lincoln Avenue, Fennimore, Wisconsin 53809, (608) 822-3276.

2. Chain of Lakes Impact Study: Field experiences in the study of a lake environment are provided to high school students in this project. Students analyze water samples for various chemical substances, collect and identify lake flora and fauna, identify environmental problems in the lake and its watershed and relate all of these environmental factors to each other. The impact study is a long-range

one to be conducted over several years and is being done cooperatively with local, regional and state agencies and organizations. Robert R. Crase, Chetek Area Schools, 1201 6th Street, Chetek, Wisconsin 54728, (715) 924-3136.

3. Inside, Outdoor Units in Environmental Education, Phase I: A multidisciplinary project which deals with the rich environment heritage of a predominantly rural school district and relates it to present day practices designed to promote environmental quality. A natural area is being developed as an outdoor laboratory with the help of many community members and organizations. Although currently concentrating on grades 4-6, the program is being expanded to both lower and higher grades. Frank Luedtke, Eleva-Strum Public Schools, Eleva, Wisconsin 54738, (715) 287-4217.

4. Outdoor Classroom - A Unique Experience K-12: The project supports a program for an outdoor classroom being developed on a 10-acre site adjacent to a new elementary school. Personnel from the Soil Conservation Service and Department of Natural Resources aided the district in developing the facility, developing activities for the facility, and training teachers. Although concentrating on the sciences, other disciplines are included in portions of the program. Charles Pouba, Greenwood Community Schools, Greenwood, Wisconsin 54437, (715) 267-7211.

5. Interdisciplinary Approach to Environmental Studies Through Nuffield and ISIS Science Programming: A science program was developed utilizing the Nuffield 5/13 Science Program and its environmental study materials at the elementary level and the ISIS program at the secondary level. In addition, a science-social studies team developed and taught an environmental studies program at the secondary level. Community participation was solicited in the program and in the construction of a field study station in a woodlot adjacent to the high school. Richard Cross, Hilbert Public Schools, Hilbert, Wisconsin 54129, (414) 853-3531.

6. New Leaf: A multidisciplinary project bringing together art, language arts, and science at the junior-senior high school levels, the project attempts to develop a personal awareness (self), a social awareness (others), and an environmental awareness (world). Multi-media, and frequently nonverbal, communication is stressed. The teaching staff crosses discipline lines, as do instructional activities. Individual and small group research projects within the local community are utilized in the program. Vern Pinkowski, Mellen Public Schools, 420 S. Main Street, Mellen, Wisconsin 54546, (715) 274-3601.

7. Total Team Techniques in Individualized Environmental Education: The project extends an effort to develop a multidisciplinary team to aid high school students in individualized study of environmental problems. The project

acquired materials and equipment to collect and analyze data about the natural environment and environmental problems, and to collect, preserve, and disseminate environmental information. Mylo Haford, Melrose-Mindoro High School, Melrose, Wisconsin 54642, (715) 488-2201.

8. Summer Program on Environmental Studies and Human Ecology: A multidisciplinary summer program designed as a pilot program to test some instructional activities for incorporation into the curriculum of the academic year. The project involves students in a study of the local natural and man-made environments. One major activity involves students in the construction of a model city of Monroe utilizing modern urban planning principles and considers such things as energy production, sewage treatment, transportation, water sources, air pollution, solid waste disposal, and conservation measures. Wayne Stroessner, Monroe Senior High School, 1600 26th Street, Monroe, Wisconsin 53566, (608) 325-9171.

9. Environmental Education Television: A need to modify existing curricula was identified following a detailed study. Environmental education television was selected as the vehicle for this change. A three-phase implementation plan running through the 1977-78 school year has been developed. The first phase included a continuing curriculum study, purchase of environmental education materials and equipment, and in-service training. Every teacher and administrator in the district will ultimately be involved. Gerald Nelson, Prairie Farm Schools, Prairie Farm, Wisconsin 54762, (715) 455-1615.

10. Communication Arts and Environmental Education: Non-college-bound students are given an opportunity to explore various communication techniques, develop AV materials about the local environment, and in the process develop an environmental awareness. Equipment to be utilized includes the 35mm camera, 8mm and 16mm motion picture equipment, and video equipment. Staff involvement includes representatives of the English Department, the Director of Outdoor Education, and administrators and consultants. Roger Bauer, D.C. Everest Area Schools, 1461 Grand Avenue, Schofield, Wisconsin 54476, (715) 359-4221.

11. Southern Door Community Nature Center: This project involves art, music, English, industrial arts and science in a program taking place in a natural setting. An 18' x 20' log building has been donated to the school district and has been disassembled, moved to the school site, and reassembled. An outdoor fire-brick Raku Kiln has been constructed. Materials and equipment purchased through the project will be used for activities in art, creative dramatics, elementary school English, natural resource education, music, building construction, biology, earth sciences, and

elementary school science. Lloyd Jilot, Southern Door County Schools, Brussels, Wisconsin 54204, (414) 825-1212.

State funded: none.

Locally funded:

1. Fallen Timbers Environmental Center. George Howlett, Seymour Public Schools, 10 Circle Drive, Seymour, Wisconsin 54235, (414) 833-2304.

2. Environmental Education Curriculum Guide. Eugene Ertz, West Salem Public Schools, West Salem, Wisconsin 54664.

3. Wausau School Forest, Hugh Curtis, Wausau Public Schools, 407 Grant Street, Wausau, Wisconsin 54401.

Other Funding:

Community Studies Program: A three-semester experimental project for developing the cognitive and affective capabilities of high school students has been designed and is being operated by the Milwaukee Educational Foundation.

Participants learn about specific dimensions of urban life by conducting field studies of various Milwaukee-area communities. The cognitive dimension of the program centers on a process of self-directed, inductive, community-based education. Participants also develop a common context and framework for analyzing their own personal values.

Participants from grades 11 and 12 come daily from eight Milwaukee area high schools on a half-day, one-semester basis. Full academic credit for the work is awarded.

Six teachers from participating schools serve as teacher-facilitators and guide students in developing and carrying through their own field study plans. These teachers receive full-time program assignments. Each morning they participate in in-service training and regular planning sessions and also research and further develop inquiry plans initiated by the students. Teachers are responsible to one of six inquiry teams, each of which is comprised of 20 students. Inquiry teams explore: Government and Political Behavior, Social Character, Environment and Land Use, Urban Landscape, Social Services, and Business and the Consumer.

Additional personnel assisting both teachers and students include Milwaukee Educational Foundation staff who are familiar with methods of urban research and innovative curriculum planning and who direct the in-service training, part-time resource persons with expertise in photography, graphic arts, video and neighborhood research methods who instruct participants in the use of their tools for data gathering and field analysis; and community residents who identify representative persons and places of value in the communities.

In the first semester of the Community Studies Program, students spend their orientation period at the downtown program center where they study characteristics of urban Milwaukee and its various communities, receiving training in observation or viewing skills and an introduction to value clarification activities. They also learn a basic outline for developing their own idea into a field study plan.

During the next three months, students work from field centers, established in the community they were studying, where they obtain their equipment, store and exchange data and share their experiences with other team members.

John T. Gilligan, Director, Community Studies Program, Milwaukee Educational Foundation, 783 North Water Street, Sixth Floor, Milwaukee, Wisconsin 53202, (414) 276-7153.

College and University Activities in Environmental Education

Teacher Education:

1. A conservation education major is offered at the University of Wisconsin-Stevens Point. Contact Dr. Daniel Trainer, Dean, College of Natural Resources, University of Wisconsin, Stevens Point, Wisconsin 54481, (715) 346-4617.

2. Outdoor education minors are offered at the University of Wisconsin-Stevens Point (see Daniel Trainer, above) and the University of Wisconsin-Whitewater. Contact Dr. J. Homer Englund, Roseman 141, University of Wisconsin, Whitewater, Wisconsin 53190 for information on the latter program, (414) 472-1793.

3. A conservation education minor is offered at the University of Wisconsin-Green Bay. Contact Dr. Jim Busch, University of Wisconsin, Green Bay, Wisconsin 54302, (414) 465-2137.

Other:

1. Central Wisconsin Environmental Center, a non-profit organization operated under the sponsorship of the University of Wisconsin-Stevens Point, College of Natural Resources. The center has a resident staff and also uses an auxillary staff consisting of students majoring or minoring in forestry, wildlife, soils, water science, outdoor education and elementary and secondary education. Richard Wilke, Central Wisconsin Environmental Center, Route 1, Amherst Junction, Wisconsin 54407, (715) 869-3428.

2. Sigurd Olson Institute for Environmental Studies, a center concentrating on the study of the regional environmental problems of northern Wisconsin. Staff work with municipal governments, schools, etc. Robert Brander, Sigurd Olson Institute for Environmental Studies, Northland College, Ashland, Wisconsin 54806, (715) 682-4531.

Cooperative efforts - The University of Wisconsin-Extension, Department of Natural Resources, Department of Public Instruction, University of Wisconsin-Whitewater, and the Wisconsin Association for Environmental Education, Inc. offer a series of environmental education workshops. They deal with various aspects of environmental education.

State Resource Agency Activities in Environmental Education

1. Several cooperative efforts are mentioned above.

2. Independent efforts - The Wisconsin Department of Natural Resources has recently opened the new MacKenzie Environmental Education Resident Center near Poynette, Wisconsin. It offers programs for school children of all ages and also adults. Gen Bancroft, Manager, MacKenzie Environmental Education Center, Poynette, Wisconsin 53955, (608) 635-4498.

Other Environmental Education Activities in the State

1. Trees for Tomorrow Four Seasons Environmental Education Center, Gene Wirsig, Executive Director, Eagle River, Wisconsin 54521, (715) 479-6456. An industry-operated program offering multi-day workshops for school students, teachers and other adult groups.

2. Riveredge Nature Center, Inc., G. Andrew Larsen, Naturalist, P.O. Box 26, Newburg, Wisconsin 53060, (414) 675-6888.

3. Schlitz-Audubon Center, Donald Danielson, 8566 North Lake Drive, Milwaukee, Wisconsin 53217, (414) 352-2880.

4. The Audubon Camp in Wisconsin, Sarona, Wisconsin 54870. Contact Edward Brigham, National Audubon Society, Route 4, Red Wing, Minnosota 55066.

- David C. Engleson, Consultant
Environmental Education
Department of Public Instruction
126 Langdon Street
Madison, Wisconsin 53706
(608) 263-3327

November 1975

APPENDIX: WISCONSIN STATUTES RELATED TO ENVIRONMENTAL EDUCATION - 1975

1. Course Requirements

"37.29 Cooperative Marketing and Consumers' Cooperatives. The governing boards of the University of Wisconsin, state universities and county teachers colleges shall provide in their respective institutions adequate and essential instruction in cooperatives, and in conservation of natural resources." (See note following 118.19 for definition of adequate and essential instruction.)"

"118.01 Curriculum Requirements, (1) FUNDAMENTAL COURSE. Reading, writing, spelling, English grammar and composition, geography, arithmetic, elements of agriculture and conservation of natural resources, history and civil government of the United States and of Wisconsin, citizenship and such other subjects as the school board determines shall be taught in every elementary school . . . (8) COOPERATIVES AND CONSERVATION. Every high school and school of vocational, technical and adult education shall provide instruction in cooperative marketing and consumers' cooperatives and conservation of natural resources."

2. Teacher Training and Certification

"118.19 Teacher Certificates and Licenses. (6) In granting certificates or licenses for the teaching of courses in economics, social studies or agriculture, adequate instruction in cooperative marketing and consumers' cooperatives shall be required. In granting certificates or licenses for the teaching of courses in science or social studies, adequate instruction in the conservation of natural resources shall be required."

NOTE: "Adequate preparation in conservation of natural resources (Wisconsin Statutes 118.19(6)) must include a program of study including:

History and philosophy of the conservation movement
Appreciative understanding of the wide variety of natural resources
Importance of conservation of natural resources in a national and international setting
Relationship of supply of natural resources and economic structure
Natural resource management: techniques, need for and type of controls
Role and importance of resource use planning for the future; public and private

Public and private schools of higher education, where Section 118.19 applies, shall submit a syllabus of the course of instruction in the conservation of natural resources or a listing of units if the preparation in conservation is integrated in other courses. Time allotments must be indicated unless conservation of natural resources is offered for credit, in which case credit earned must be indicated." (Wisconsin Administrative Code 3.03(4) (a)5).

3. State Financial Aids

"121.02 School District Standards. (1) A school district shall meet the following standards under criteria established by the department in compliance with sub. (2).

(b) Every teacher shall be paid at least the minimum salary and granted the sick leave specified in s. 121.17 and the district shall comply with ss. 42.39 to 42.43, 118.01, 118.02, 118.07(2) and 120.13(4). (NOTE: see 118.01, page 1).

4. Outdoor Facilities

"28.20 Community Forests. Any city, village, town or school district may acquire land, engage in forestry and appropriate funds for such purpose. In the case of a city or village or its school forest, the forest may be located outside the city or village limits."

"118.05 School Conservation Camps. (1) To promote an understanding of geology, geography, conservation, nature study and other aspects of general knowledge which are learned best by actual contact with nature itself, any school district may establish, operate and maintain and levy taxes to support individually or in cooperation with other school districts or municipalities a school conservation camp. The camp need not be within the school district.

(2) The school board of any such district may operate, contribute to the operation of, participate in the joint operation of, pay or charge fees for the operation of the school conservation camp. The school board may admit non-resident pupils as well as resident pupils of the school district. The school board shall determine

age and other entrance requirements of the program to be offered. The camp may be operated in summer or at any other time that the school board determines.

(3) The school board may acquire, rent or accept the free use of facilities and equipment to operate the camp and may accept private contributions of all kinds.

(4) The school board may conduct the camp on property under the custody of other municipal, state or federal agencies when permission is granted or on private property with the consent of the owner.

(5) Every state agency shall cooperate in making their staff and facilities available to further the objectives of this program."

WYOMING

State Plan, Legislation, Teacher Certification

The State of Wyoming has no formal plan or curriculum project for environmental education as these are produced at the local level by individual school districts.

There has been no environmental education legislation.

The Wyoming State Department of Education issues certificates for school teachers, supervisors, and administrators, and has endorsements for the various areas of teaching. Environmental education is not yet a recognized endorsed area which allows teachers holding a regular certificate to teach in the area. The addition of environmental education to the list of endorsed areas is under consideration.

Coordinator

Dr. William M. Futrell, Science/Mathematics/Environmental Education Coordinator, State Department of Education, 241 Hathaway Building, Cheyenne, Wyoming 82002, (307) 777-7411.

Advisory Board, Publications

There is no environmental advisory board for the State of Wyoming, nor does the State Department of Education have environmental education publications.

Public Schools Having Environmental Programs

1. Lander High School, Lander, Wyoming
2. Kelly Walsh High School, Casper, Wyoming
3. Upton High School, Upton, Wyoming
4. Cheyenne Eco Lab, Cheyenne, Wyoming
5. Wheatland High School, Wheatland, Wyoming

University Activities

The University of Wyoming is the only four-year institution of higher learning in the state. They offer one graduate level course specifically designated as environmental education. In addition, the Science and Mathematics Teaching Center at the University of Wyoming offers stimulating and individualized courses and programs which "cut across" traditional subject matter restrictions. These programs involve environmental education hands-on activities in the various science areas and mathematics.

Other environmental education activities in the State are conducted by: Game and Fish Department of Wyoming; Science Camp, Kelly, Wyoming; Eco Lab, Cheyenne Public Schools, Cheyenne, Wyoming.

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SELECTED ERIC DOCUMENTS

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